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PROCEEDINGS

OF THE

383-03

American Pharmaceutical Association

AT THE

THIRTEENTH ANNUAL MEETING

HELD IN

BOSTON, MASS.,

SEPTEMBER, 1865.

ALSO, THE

CONSTITUTION AND ROLL OF MEMBERS.

PHILADELPHIA:

MERRIN & SON, PRINTERS,

No. 243 Arch Street, below Third St.

1865.

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1865-66.

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QUERIES FOR GENERAL ACCEPTANCE.

To be reported on at the meeting in Detroit, Mich., 1866.

QUERY 12.—An essay on *Podophyllum peltatum*, chemical and therapeutical, which shall settle the question now pending relative to its active principle or principles.

QUERY 16.—In the destructive distillation of Tobacco by the process of the U. S. Pharmacopœia to get the empyreumatic oil, malate of nicotine has to be decomposed. Can a better preparation be obtained by liberating the nicotina with a sufficient quantity of potassa before distillation, reducing the heat to the minimum degree necessary to extract the alkaloid?

QUERY 21.—*Oleum Erigerontis Canadensis* is considered to be the active principle of Canada fleabane; is this correct, or is there another fixed principle possessing medical properties?

QUERY 31.—It having been satisfactorily ascertained that the actinic (or chemical) rays of light are intercepted by orange-colored glass, so as not to injure drugs and medicines, it is queried in what way this means can be most eligibly and satisfactorily applied in the shop or store room, based on the results of trials in various ways.

PREFATORY NOTICE.

The Recording Secretary takes pleasure in announcing the completion of the Proceedings of the American Pharmaceutical Association for the year 1865,—the first volume edited by him in his official capacity of Permanent Secretary. The practical experience of last year, when the Proceedings for 1864 were edited by him as Chairman of the Executive Committee, led him to expect to have this year's volume completed by the early part of November; several difficulties, however, entirely beyond the control of the editor, delayed the completion of the work.

The debates of the last meeting were frequently of great importance, concerning the welfare of the Association, as well as that of the profession at large; and it was considered advisable to print, if not the entire phonographic report, at least copious extracts from it. This report was received October 2d, and, a few days afterwards, a portion of the Minutes was handed to the printer.

Three papers had been presented to the Association in an unfinished state, and leave was granted to the authors, by special votes of the Association, to complete them for publication. Only one of them was received in proper time; one arrived on the 4th of November, while the last one did not come to hand until December 9th.

To avoid farther delay, the editor concluded not to send any proofs out of the city; this rule was departed from in two instances, one paper being considered of such great importance, that its author ought to see it in type before its final publication; the other one was mailed to a distant city by the request of its author. By the loss of one of the proofs, a delay of about five weeks was occasioned, the proof sheet not coming to hand until the 17th day of January.

The roll of members claimed the early attention of the Executive Committee. Early in October those gentlemen who hold certificates of membership, and whose names were directed to be dropped from the roll for refusing or neglecting to pay the annual dues, were notified by the Secretary of the action of the Association, and requested to return their certificates. One of them perfected his membership by paying up all arrears, another one produced satisfactory evidence of having returned his certificate to a former Chairman of the Executive Committee; the others did not comply with the request, and their names are accordingly published.

Notwithstanding many names have been dropped this year from the roll for various causes, quite a number were retained on it who have either not signed the Constitution or are largely in arrears. These Proceedings will not be sent to them until they comply with the requirements of the Constitution. It may be stated here, that some cases seemed to require the re-opening of last year's correspondence, which, four months after the last meeting, has not been brought to a close.

It will be observed that the names of deceased members are printed in a separate list; the Secretary, desirous to keep on record the year of their decease, in several instances could only approximate it. The attention of all members is particularly called to this circumstance, and every one noticing discrepancies is earnestly requested to communicate with the Secretary, in order to have them corrected in next year's proceedings.

This volume is less voluminous than its immediate predecessors for some years; it contains, however, several papers of considerable interest, and it is believed will compare favorably with those of previous years.

As editor of these Proceedings, the Secretary feels that he earnestly endeavored to have them published promptly; and to avoid similar delays hereafter, he would request all members contributing essays or reports to have them ready at the time of meeting; he will try to overcome the delays which may have occurred at the place of publication.

J. M. MAISCH,
Recording Secretary.

The editor's preface leaves but little to be said by the Executive Committee, the duties heretofore devolving upon them having been to a great extent transferred to the Permanent Secretary.

The Roll of Members has been revised with great care; it has been divided into seven classes for sake of greater facility of reference and the prevention of errors in accounts. The first list is the roll of members in good standing; the second, that of deceased members; the third, that of suspended members who still hold their certificates; the fourth, that of suspended members who never had certificates; the fifth, that of resigned members; the sixth, that of members against their will; the seventh, that of members who have never signed the constitution.

The Executive Committee would most respectfully urge upon the members, whenever they are able to correct errors that may have been made respecting the dates of the death of any of our members, to communicate at once with the Committee, as well as to inform the permanent Secretary of any changes they may make in their respective residences.

For the first time the Association are able to announce their ability to furnish entire sets of their Proceedings, as well as the minutes of the Convention of Pharmacentists and Druggists held in 1851, out of which our Association grew.

The entire set unbound, excepting the three years 1860, 1862 and 1863, which are bound, will be supplied for nine dollars; the entire set of bound volumes and the first six, none of which have ever been bound, will be furnished for eleven dollars.

The prices of the several issues are appended:

	Unbound.	Bound.
1851,	\$ 25	
1852,	25	
1853,	25	
1854,	25	
1855,	25	
1856,	25	
1857,	40	\$ 70
1858,	1 10	1 50
1859,	1 10	1 50
1860, . . . . .	.	1 00
1862, . . . . .	.	1 25
1863, . . . . .	.	1 25
1864,	1 20	1 50
1865,	1 20	1 50

The Executive Committee feel it their duty to ask all members holding books, papers, cuts and other property belonging to the Association, to forward them to the Chairman, that he may properly preserve them for any future use they may be required for.

THOS. S. WIEGAND,
Chairman of Executive Committee.
15th and Race Sts., Phila.

MINUTES
OF THE
THIRTEENTH ANNUAL MEETING.
1885.

First Session. Sept. 5th.

In accordance with a resolution adopted at the annual meeting of the Association, held last year at Cincinnati, the members assembled in the Hall of the Massachusetts College of Pharmacy, at Boston. President W. J. M. Gordon took the chair and called the meeting to order, at 3 o'clock, P. M.; Henry N. Rittenhouse acting as Secretary.

The Chair appointed Messrs. F. L. Stearns, J. Faris Moore, and Eugene L. Massot, a Committee to examine the credentials of the delegates of the local Pharmaceutical Associations.

During the absence of this Committee, the members present entered their names on the roll.

The Committee subsequently reported the following gentlemen duly accredited as delegates to the Thirteenth Annual Meeting of the American Pharmaceutical Association:

From the Massachusetts College of Pharmacy.—Messrs. Charles A. Tufts, John Buck, W. Brown, G. F. H. Markoe, and S. M. Colcord.

From the College of Pharmacy of the City of New York.—Messrs. Geo. C. Close, William B. Little, Charles W. Kitchen, P. W. Bedford, and F. F. Mayer.

From the Philadelphia College of Pharmacy.—Messrs. W. H. Pile, Edward Parrish, J. M. Maisch, E. T. Ellis, and Daniel S. Jones.

From the Maryland College of Pharmacy.—Messrs. J. J. Thomsen, J. B. Baxley, N. H. Jennings, W. W. Cunningham, and J. Faris Moore.

From the Cincinnati College of Pharmacy.—Messrs. E. S. Wayne, A. M. Johnson, L. Groneweg, Paul Reinlein, and W. J. M. Gordon.

From the St. Louis College of Pharmacy.—Messrs. Theodore Kalb,

Ferd. W. Sennewald, Hubert Prim, Eugene L. Massot, and J. S. B. Alleyne.

From the Alumni Association of the Philadelphia College of Pharmacy.
—Messrs. Thomas S. Wiegand, Ferris Bringham, R. M. Shoemaker, Charles L. Eberle, and A. E. Ebert.

No delegation from the Chicago College of Pharmacy has been accredited to this meeting of the Association.

The President inquired of the Committee whether they had decided that the Alumni Association was admissible.

Mr. Stearns.—We supposed this question was to be decided by the Chair.

A motion was made that the delegates be admitted.

Mr. Parrish.—This is a new Association, consisting of members residing all over the country, who have been graduated at the Philadelphia College of Pharmacy. Its object is laudable, and it should be a cause of congratulation that we have one more Pharmaceutical Association in the country. I gladly second the motion that these gentlemen be received and be entitled to the privileges.

Dr. Squibb.—By what rule in the Constitution are delegates received?

The President read Sec. 5, Art. II., of the Constitution.

Dr. Squibb.—I think, Sir, that this not being a local Association, the delegates cannot be admitted. Its being a general Association brings it on a par with this one, and it admits of some doubt whether one general Association can admit the delegates of another. I, therefore, move to amend, that these gentlemen be asked to participate as members of the American Pharmaceutical Association, and that the question of admitting the delegation be referred to a Committee, to report at the next annual meeting.

Mr. Parrish.—I think this is showing a very cold shoulder towards an Association of Pharmacutists, because it is not strictly local. When this Association was formed, thirteen years ago, the question was distinctly raised whether it should be a general Association, including all the apothecaries and druggists in the country, or whether it should be an Association of delegates. After a good deal of discussion, the question was decided in favor of the former,—to admit all respectable apothecaries not

liable to serious objection. No one would be admitted or retained in that Association, who is liable to objections that would exclude him from this.

The Chair inquired whether the Association met in Philadelphia, or anywhere else.

Mr. Wiegand.—We have a local habitation; we are very local indeed, meeting always in Philadelphia and at a certain time. I think this is a sufficient locality to meet in. I hope, however, the merits of the question may be decided on without any tenderness for the feelings of the delegation, and in strict accordance with the rules.

The Chair decided that the delegates could not be admitted under the Constitution.

The Chairman of the Business Committee moved an amendment to the Constitution, to admit the delegation.

The President stated that his decision was based upon his construction of the Constitution, and of course was subject to appeal.

Mr. Wiegand hoped no appeal would be taken.

Mr. Colcord appealed from the decision of the Chair, and contended that this is a local Association, within the meaning of the Constitution.

Mr. Proctor stated that the Massachusetts College of Pharmacy represents New England. If six or seven States can be represented by one body, why not ten or twelve?

Dr. Squibb.—Alumni Associations are not local Associations, within the scope and intent of the Constitution. They are graduates of Colleges, associated for fellowship rather than for representation of localities or local interests, since the members may be in all parts of the globe. Hence they are not local in reality, although they may have a fixed place of meeting, where their alma mater is.

Mr. Parrish.—This Association is local, intended for the benefit of the Philadelphia College of Pharmacy. It is as strictly local—if you come to the strict definition of the word—as the College. We have elected associate members in different parts of the country; some of our honorary members live in foreign countries; resident members have moved away, and our

interests have become identified by them; they are represented by us, and they can represent us in this Association;—and our College is none the less local.

●The question was then put by the Secretary: Shall the decision of the Chair be sustained?

It was decided in the negative, and the delegates of the Alumni Association of the Philadelphia College of Pharmacy were therefore declared admissible.

The report of the Committee on Credentials was now accepted.

The President gave notice that Prof. J. F. Moore would act in the place of our absent Treasurer.

The Chairman of the Executive Committee proposed the following names for membership in the Association:

Fred. W. Colman, Walla Walla, Wash. Ter.	Henry Biroth, Chicago, Illinois.
Robert B. Parkinson, Phila., Pa.	Charles Heylman, "
Henry Sweet, Chicago, Ill.	Emil Dreier, "
F. A. Bryan, "	M. P. White, "
J. P. Sharp, "	J. V. Z. Blaney, M.D., "
J. H. Hooper, "	J. Henry C. Simes, Phila., Pa.
Louis Woltersdorf, "	Edwin Scott, Chattanooga, Tenn.
Thomas Whitfield, "	James R. Mercein, Jersey City, N. J.
Henry G. D'Evers, "	J. M. Abernethy, "
John Parsons, "	Thomas Tanton, St. Louis, Mo.
Emil Dietzsch, "	Evermont Randals, "
Thomas Brown, "	Ferd. W. Sennewald, "
N. T. Curth, "	Daniel Roemer, Cincinnati, O.
A. B. Bryan, "	Alfred V. Forgey, "
S. S. Bliss, "	Jerome B. Jardella, Madison, Ind.
Henry W. Fuller, "	John Frey, New York, N. Y.
George McPherson, "	C. F. L. Hohenthal, "
John Burrell, Freeport, Ill.	Harvey D. Thatcher, Potsdam, N. Y.
Bunting Hankins, Bordentown, N. J.	Gustavus Krehbiel, New York, "
A. Palmer, Janesville, Wis.	James F. Morgan, "
Edwin Tomlinson, Fort Wayne, Ind.	F. W. Colby, "
Charles E. Hanchen, Boston, Mass.	Robert C. Kennedy, Cleveland, O.
Augustus Henkel, Phila., Pa.	Henry E. Webb, New York, N. Y.
Robert Platzer, Phila., Pa.	Max Frohwein, "
W. H. Muller, Chicago, Ill.	O. W. Kitchen, "
G. M. Hambright, "	Alfred Mason, "
Joseph Willard, "	T. Gibson Tweed, Lowell, Mass.
James Boland, "	Wm. E. Jenkins, S. Boston, Mass.
N. Mead, "	James Gallagher, Terre Haute, Ind.
	William H. French, Lowell, Mass.

Geo. W. Austin, Terre Haute, Ind.	Eugene Whittemore, Boston, Mass.
D. G. Wilkins, Boston, Mass.	Charles F. Bartlett, "
J. Howes Dyer, "	Wm. D. Broomhead, East Somerville, Mass.
Chas. M. Duren, St. Albans, Vt.	J. Sanborn, Jr., Dorchester, Mass.
Henry C. Steever, Memphis, Tenn.	E. H. Perry, Boston, "
Andrew Blair, Phila., Pa.	G. D. Dows, " "
G. W. Eldridge, "	George Marsh, Dedham, "
J. L. Bispham, "	F. W. Hoyt, Lowell, "
J. R. Nichols, Boston, Mass.	E. H. Doolittle, Jr., Dedham, "
Bruce M. Brake, Cincinnati, Ohio.	S. A. D. Sheppard, Salem, "
G. W. Brown, Logansport, Ind.	James F. Babcock, Boston, "
H. Van Sweringen, Ft. Wayne, Ind.	John R. Colby, " "
Eben Blatchford, Jr., Rockport, Mass.	E. B. Knight, Melrose, "
C. G. Underwood, Boston, Mass.	M. L. Wetherell, Gloucester, "
J. B. Colton, "	Andrew Geyer, Ipswich, "
W. D. Atkinson, "	W. Augustus Safford, Boston, Mass.
L. R. Blackman, Jackson, Mich.	F. W. Simmons, " "
Leonce Cherot, Memphis, Tenn.	Frank B. Clock, Manchester, N. H.
G. W. Churchill, Chelsea, Mass.	F. E. Covell, Portland, Maine.

A ballot was ordered, and the President appointed Messrs. Colcord and Massot tellers, who reported their unanimous election.

The roll was called, when the following members answered to their names :*

Samuel M. Colcord, Boston.	Eben Blatchford, Rockport, Mass.
Alfred B. Taylor, Philadelphia.	Wm. D. Broomhead, E. Somerville, Mass.
Edward Parrish, "	W. B. Little, New York.
E. W. Sackrider, Cleveland, O.	M. M. Selfridge, Bethlehem, Pa.
Thos. S. Wiegand, Philadelphia.	Chas. A. Heinitsch, Lancaster, Pa.
P. W. Bedford, New York.	C. H. Dalrymple, Morristown, N. J.
H. M. Whitney, Lawrence, Mass.	G. C. Close, Brooklyn, N. Y.
S. Mason McCollin, Philadelphia.	Chas. W. Kitchen, New York.
James F. Babcock, Boston.	Jos. H. Thacher, Portsmouth, N. H.
Robert F. Lattimer, Jackson, Mich.	Thos. H. Barr, Terre Haute, Ind.
Eugene Whittemore, Boston.	W. H. Crawford, St. Louis.
B. F. Stacey, Charlestown.	Geo. W. Berrian, Jr., N. Andover, Mass.
Edward C. Jones, Philadelphia.	Chas. A. Tufts, Dover, N. H.
Nathan F. Peck, Willimantic, Conn.	Eugene L. Massot, St. Louis, Mo.
Charles H. Lyon, Jr., Boston.	Ashel Boyden, Boston, Mass.
W. H. French, Lowell, Mass.	Aug. P. Melzar, Charlestown, Mass.
Theo. Kalb, St. Louis, Mo.	
Chas. M. Duren, St. Albans, Vt.	

* This list contains also the names of a few members who were not present at the first session, but came in during the subsequent session.

John Buck, Chelsea, Mass.	T. Gibson Tweed, Lowell, Mass.
Albert E. Ebert, Chicago, Ill.	William E. Jenkins, Boston, "
W. H. Gleeson, Boston.	Geo. W. Churchill, Chelsea, "
W. J. M. Gordon, Cincinnati.	Wm. D. Atkinson, Jr., Boston, Mass.
F. W. Sennewald, St. Louis, Mo.	Geo. W. Woodbridge, " "
E. R. Squibb, Brooklyn.	Robert R. Kent, " "
C. H. Lowe, Cambridgeport.	Thos. Tanton, St. Louis, Mo.
Chas. L. Eberle, Germantown, Pa.	Danl. G. Wilkins, Boston, Mass.
H. N. Rittenhouse, Philadelphia.	John Butterworth, " "
R. M. Shoemaker, Jr., "	J. M. Maisch, Philadelphia.
Jos. L. Parker, Boston.	Jas. T. King, Middletown, N. Y.
Ferris Bringham, Wilmington, Del.	George Marsh, Dedham, Mass.
F. Stearns, Detroit.	Geo. D. Ricker, Boston, "
Wm. Procter, Jr., Philadelphia.	Theo. S. Harris, " "
W. E. P. Baylis, New York.	Henry Haviland, New York.
Thos. Hollis, Boston.	R. I. Taylor, Newport.
Chas. H. Dennett, Charlestown.	Thomas Doliber, Boston.
Geo. D. Towne, Boston.	Wm. S. N. Allan, Newport, R. I.
A. H. Everett, New York.	Geo. F. H. Markoe, Boston.
A. H. Gould, Fall River.	Geo. H. Chapman, "
J. Sanborn, Jr., Dorchester.	Evan T. Ellis, Philadelphia.
J. S. Melvin, Boston.	E. Smalley, Boston.
Wm. Brown, "	R. H. Stabler, Alexandria, Va.
Daniel Henchman, Boston.	James T. Shinn, Philadelphia.
James N. Callan, Washington, D. C.	S. A. D. Sheppard, Salem, Mass.
Jas. E. Blake, New Bedford, Mass.	Henry D. Fowle, Boston, "
J. Faris Moore, Baltimore.	O. G. Dort, Keene, N. H.
Chas. Shivers, Philadelphia.	J. H. Dyer, Boston.
Henry W. Lincoln, Boston.	Alf. Daggett, Jr., New Haven, Conn.
Frank W. Simmons, "	B. Osgood Wilson, Boston.
Israel J. Grahame, Attleboro', Pa.	W. H. Pile, Philadelphia.

The Standing and Special Committees now presented the following reports, which were read by their titles and laid upon the table:

- Report of the Executive Committee;
- Report on the Progress of Pharmacy; to which is attached the Report of the Corresponding Secretary;
- Report of the Committee on Scientific Queries;
- Report of the Committee on a new form of Certificate.

The report of the Executive Committee being called up, the Chairman, J. M. Maisch, read it, as follows:

REPORT OF THE EXECUTIVE COMMITTEE.

"The Executive Committee respectfully submit the following Report of their labors during the last year.

At the meeting in Cincinnati, a resolution was passed, but afterwards reconsidered and lost, to withhold the Proceedings from all members who are three years in arrears with their annual contributions.

The rise in the price of paper and labor made it obvious that the cost of publishing the Proceedings would be considerably higher than heretofore, and in view of the depleted state of our treasury it was suggested, and agreed to by the Treasurer, to send out the bills for the year 1865 in the early part instead of in the middle of the year, in order to avoid, if possible, the necessity of borrowing money to meet the current expenses, as had to be done on former occasions. A glance over the Treasurer's books revealed the alarming fact that the amount due to the Association by delinquent members, who were in January last in arrears with their contributions for *four* years and over, amounted to nearly three thousand dollars !

The Chairman of your Committee addressed a circular to the members of the Executive Committee, and suggested, in view of the reconsidered resolution before mentioned, to withhold the Proceedings from all members *four years in arrears*, which was unanimously agreed to.

It having been ascertained that the Association was not in possession of the signatures of many members to our Constitution, and it being impossible to ascertain whether these signatures had ever been given and subsequently lost, or not, it was likewise agreed to require from all such members their signature to the Constitution, and in the event of their refusal or neglect to comply with this request to withhold the Proceedings from them likewise.

In the meantime a circular had been addressed to all the newly-elected members, requesting them to sign the Constitution and pay the dues in accordance with Art. II. Sect. 3 and 4. The same circular was also sent to all those members whose signatures were not in possession of the Executive Committee.

The answers to these communications were extremely few, and after waiting for several weeks another circular was sent, with a copy of that portion of the preface to the Proceedings for 1864 referring to their case.

The cases of delinquent members were treated precisely the same way, two circulars being sent at different times to each one four years in arrears who did not respond to the first.

All neglects and refusals to comply with the requests of the Executive Committee shared alike ; the Proceedings for the last year were withheld from such members.

At the approach of the present meeting, early in August, the Chairman issued another circular, chiefly with the view of informing all concerned that their cases would be laid before the Association for its action

In the larger cities one of the members of the Association had been requested by the Chairman to endeavor to collect the signatures and dues of the members in question, and we hereby express our gratitude to the following gentlemen for their prompt aid extended to us: Messrs. S. M. Colcord of Boston, P. W. Bedford of New York, J. B. Baxley and Prof. J. Faris Moore of Baltimore, J. L. Kidwell, of Washington, D. C., Eugene L. Massot of St. Louis, E. H. Sargent of Chicago, Frederick Stearns of Detroit, W. J. M. Gordon of Cincinnati, J. C. Mattern of Pittsburg.

Appended to this report we hand in a list of those members who have never answered the request of the Executive Committee to sign the Constitution, and those who refuse to sign it mostly for the reason that they never intended to become members. We also append a list of those members to whom circulars were sent for being in arrears and who have never paid up their dues.

It must be remarked here, that no communication was held or attempted with members of the above mentioned classes who reside in States lately in rebellion against the United States. A list is appended of those of whom the Executive Committee could find no evidence of their ever having signed the Constitution.

The correspondence in relation to the above-mentioned classes of our members had to be carried on while the Proceedings of the Association in 1864 were in progress of publication. The chief causes for the delay in issuing the volume, were beyond the control of the Executive Committee. Notwithstanding an unlooked-for delay in the transmission of the minutes and manuscript papers, and the sending of proofs to distant cities, hopes were entertained to deliver the Proceedings to the members early in January; the subsequent delay was occasioned by the dis-appointment in the execution of the principal plates.

An edition of one thousand copies was printed, 750 of which were bound in cloth, and 250 in paper covers.

The cost of publishing the same was as follows:

For Composition,	\$459 21
Press work,	55 20
Paper, (27 reams at 13 dollars),	351 00
Lithographing, wood cuts, and printing,	98 00
Binding 750 volumes in muslin (25 cts.,)	187 50
Paper covers and binding,	9 50
Wrapping 650 volumes,	5 50
Internal revenue tax,	57 60
Total cost of publication,	\$1223 51
The other expenses of the committee were:	
For Postage and revenue stamps,	\$44 60
Postal money orders,	40
Stationery and blank books,	5 61

Delivery of Proceedings in Philadelphia,	2 00
Packing boxes and freight,	27 20
Printing 500 Constitutions,	9 71
Printing circulars,	15 75
Finishing 16 vols. Proceedings 1863,	6 50
Freight for exchange Journals,	50
Binding manuscript,	1 50
Fire Insurance,	13 30
	<hr/>
	\$127 07

Total expenses of the Executive Committee during the year, \$1350 58

One copy, bound, was delivered by mail, postpaid, to each member entitled, except those residing in the larger cities, who were supplied by one of the resident members thereof. No one was omitted, but your Committee had in a few instances to furnish second copies to some members who had changed their place of residence, without being able to recover the first one. Many claims for back volumes have been received and attended to. Your Committee would suggest that the Association take into consideration how it could best be protected against such losses. It appears to be very proper for a member who changes his residence to notify at once the Treasurer, or the Chairman of the Executive Committee, or perhaps both, of this fact; in case of his failure to do so, it remains with the Association to say whether he shall forfeit his claim to a copy of the Proceedings, if it has been lost in consequence of such neglect.

A much safer way of delivering the book to members residing in the interior would be through some drug house in the larger cities, or, where there are four or more residing in one place, by express to one member, to be distributed to the others.

The stock of Proceedings of the different years stored at the building of the Philadelphia College of Pharmacy is as follows:

For 1852,	None.
" 1853, 225 copies in paper covers.	
" 1854, 43 " " "	
" 1855,	None.
" 1856, 42 " " "	
" 1857, 293 " " "	33 copies bound.
" 1858, 212 unbound, 122 " " "	32 " "
" 1859,	83 " "
" 1860,	169 " "
" 1862,	350 " "
" 1863,	280 " "
" 1864, 247 copies in paper covers, 117	" "

This does not include the amount on hand at Boston, Baltimore, New York, Cincinnati and Pittsburg, nor the volumes in course of transmis-

sion to Philadelphia from Cincinnati, which had not arrived when the Chairman left to attend the meeting.

The stock was insured by the Executive Committee in the New Amsterdam Fire Insurance Company of New York City, for nineteen hundred dollars, at a premium of seven-tenths per cent., making an annual expense of \$13.30. The Committee recommend that the amount of insurance be increased or decreased annually, by the Chairman of the Executive Committee, if the value of the property of the Association should change materially.

Comparatively little revenue was derived from the sale of Proceedings; as far as ascertained by the Committee, the sales were as follows:—

15 copies of 1864,	\$22.60
18 " of previous years,	18.09
	<hr/>
	\$40.09

In order to increase the sales, the Committee recommend to deposit with all Colleges of Pharmacy in the United States that are willing to undertake the trouble, a small number of copies of the different years, provided that the Secretaries of these Institutions agree to furnish a complete statement of sales and stock remaining unsold, by the 1st of August of each year, to the Chairman of the Executive Committee.

They also recommend to the members who contribute papers for publication to have the essays written upon foolscap paper, to enable the Recording Secretary to preserve these papers in accordance with Art. III. Section 4 of the Constitution.

Our experience during the past year leads us to the belief that our Constitution ought to be changed, and rendered more stringent in several respects.

Article II. Sect. 2, speaking of the mode of admission to membership, ought to require a *written* application to the Executive Committee, by signing the blanks attached to our printed Constitution, the recommenders to be two members in good standing of the Association.

We conceive that, our Association being now extended over nearly all the States and Territories of the Union, there can be but little difficulty for applicants finding among the druggists and apothecaries of their own State, or among their former acquaintances, if they live in a remote section, members who may be willing to testify to their eligibility. The time, it seems to us, has passed away when we ought to allow persons, no matter how worthy, who have no interest whatever in our welfare, to say whom *they* consider worthy to be our associates. In case of election, the application might be considered as a virtual signing of the constitution until such a time when they are present at an annual meeting, when it ought to be their duty to sign their name in the book of Constitution. If this is adopted, the words "signed the Constitution and" would have to be omitted.

Section 4, Article II. we recommend to amend by making the annual

contribution payable in the month of January of each year, and to make the loss of membership depending on the neglect to pay this contribution for two instead of three years. The fee of three dollars for a certificate of membership we recommend to discontinue, and to have in lieu thereof an admission fee of *five dollars*, which sum is to accompany the application, to be returned in case of non-election, and for which the certificate will be issued, if elected. This document ought to be signed also by the Treasurer.

We also recommend to add a new section to Article II., requiring members who desire to withdraw from the Association to notify the Treasurer of their intention, who shall be authorized to accept the resignation, provided the members have paid their dues, returned the certificate, and otherwise complied with the Constitution, the Treasurer to report all resignations at the next annual meeting.

In Article III. Section 6, it seems to facilitate the duties of the Treasurer, and to fulfil all the intentions contained in the second sentence of Art. IV. Sect. 2, if the Treasurer reports to the Association instead of to the Executive Committee, all delinquents, &c. We recommend that both sections be altered in this manner.

Article IV. Section 2 is recommended to be altered by omitting among the duties of the Executive Committee to report annually a revised roll of members. This Committee have no power to omit the name of any member from the roll except by direction of the Association, even not for being in arrears. It seems to us that the roll is revised by the action of the Association, and the report by the Executive Committee of the revision of the roll, in accordance with this action, is annually appended to the Proceedings.

It appears expedient to us to make some provision for the readmission of such members who may be suspended for non-payment of dues. To avoid all subsequent trouble, they ought to be required to accompany their application for readmission with the balance in full to entitle them to life membership.

We deem it expedient to say a few words with regard to the financial prospects of the Association. The heavy expenses for publishing the last Proceedings could only be met by the prompt payment of the annual contributions of the current year, and of the debts of some members incurred in past years. It is more than probable that very little revenue will be derived hereafter from this latter source, nearly all who allowed their bills to accumulate for four years or more, and who feel any interest in the cause of Pharmacy having paid up. Each year a number of members by becoming life members become exempt from dues, and if hereafter we allow no one to leave his dues unpaid for more than two years, we can henceforth calculate only on the new acquisitions to our number. If we calculate the expenses of the Association annually at \$1200, it will require an average addition of forty-eight members each year, which your committee thinks is within the limits of every probability. No further taxing of

life members will be necessary if we only carry out our own law. But in case any unforeseen emergency should arise, a clause might perhaps be added to the Constitution, by which an extra tax might be levied on all members alike at any annual meeting, such tax to be paid by the month of January following. We have no doubt that an additional assessment would be willingly paid by each member, if the Association has expressed the necessity for it.

Gradually, as the blessings of peace continue, our expenses will be less again, and then the time may come when we shall be enabled to offer prizes for original investigations, if deemed proper. At present our finances do not appear to warrant it.

Before closing, the sad duty remains to be performed by your Committee of announcing the names of those of our associates whom death has removed from amongst us. We have heard of the departure of the following members since our last meeting:—

G. O. Wilson, of Boston, Mass.
Wm. Gay, Cambridgeport, "
D. F. White, Charlestown, "
W. F. Clency, Cincinnati, Ohio.
Frederick L. John, Phila., Pa.

Frederick Rollman, Phila., Pa.
N. Cressman, Waterloo, C. W.
Lewellyn Phillips, Baltimore, Md.
William Longshaw, Jr., Bayou Sara,
La.

FREDERICK L. JOHN was born at Gehoven, Prussia, on the 10th of April, 1811, was educated in Prussia as a Pharmaceutist, and emigrated to this country in January, 1842. In 1844 he commenced business in Race below Fourth Street, and by his industry and care very soon acquired a well-deserved reputation as a practitioner of Pharmacy. He superintended to within a short time before his death the operations of his laboratory, leaving the prescription department in the hands of his partner and former assistant, Mr. Cramer. He was a careful and conscientious worker in the laboratory and behind the prescription counter. His pride was to make every preparation of the best quality, and to have of every drug, indigenous as well as exotic, the best without regard to cost. He continued to cultivate the auxiliary sciences to pharmacy, particularly chemistry and botany. Always on the alert for improvements and meritorious novelties, and ever ready to impart the results of his experience to his friends, he acquired many friends both among the pharmaceutical and medical professions. Unassuming in his demeanor, charitable in his relations with the needy, liberal as a votary of science, and thorough as a disciple of pharmacy, his urbanity and integrity will cause him long to be remembered by his friends and acquaintances as an excellent man. He died in Philadelphia, on the 11th of December, 1864, before he had completed his 54th year.

FREDERICK ROLLMANN was born at Schlüchtern, Hessa, where, in his 17th year, he was apprenticed to the apothecary business, and served subsequently as clerk in different parts of Germany until 1851, when he emigrated to this country. In the year 1853 he commenced business in Philadelphia, at the corner of Twelfth and Mount Vernon Streets, and became a member of this

Association in 1862. He was a careful and conscientious pharmacist, and quite successful in business. His health failing, he visited his native country in 1864, and after his return was taken with typhoid fever, which terminated his life on the 9th of September, 1864.

LEWELLYN PHILLIPS was born four miles from Washington City, in Montgomery Co., Md., on the 26th of March, 1826. He commenced the study of Pharmacy in the store of Mr. John L. Kidwell, in Georgetown, D. C. At mature age he became the proprietor of a store in Baltimore, and manifested much zeal and interest in his profession. He was a firm supporter of the Maryland College of Pharmacy, and, in the year 1850, engaged actively and earnestly in its reorganization. The records of that Institution recite the confidence placed in him by the members. He filled the office of Vice President for a number of consecutive years, and only resigned that position to take the more active one of Secretary. He also occupied the Chair of Professor of Pharmacy, and performed the duties with much credit to himself and honor to the Institution. His feeble health, however, compelled him to resign that position, and for some years afterwards continued in an increasing decline, until he yielded to the last demand of nature, on March 19th, 1865.

Mr. Phillips was an excellent pharmacist, a courteous gentleman, and a Christian. His kind and genial disposition endeared to him many friends; a persistent, conscientious effort to do right, act impartially and with strict justice toward his friends, appeared to be his favorite enjoyment. His calm and passive temper, aided by a strong, well-balanced mind, matured by experience, made him a wise counsellor and profitable companion.

WILLIAM LONGSHAW, JR., of Bayou Sara, La., lost his life during the memorable attack on Fort Fisher, reaching the age of 28 years. He was attached to the United States Navy in the capacity of Passed Assistant Surgeon.

WILLIAM GAY died in Cambridge, Massachusetts, Jan. 20th, 1862, aged 27 years. He served his time with Dr. Henry Thayer, in Cambridge, and was with Mr. Augustus R. Bayley, Dr. Thayer's successor, five years or more. He was beloved for his social qualities, respected for his probity, and trusted for his skill in his profession. He had just succeeded in establishing a business and a reputation in Brighton, Mass., when symptoms of consumption appeared, which speedily proved fatal.

DANIEL F. WHITE died in Charleston, Mass., April 10th, 1864, in the 29th year of his age. He was the junior partner in the firm of D. F. White & Co., Druggists and Manufacturing Chemists. He was intelligent, active, energetic and prompt in all his transactions, and of a kind and generous disposition.

WM. F. CLENCY, of Cincinnati, was killed on board of the ill-fated steamer "Sultana," which exploded her boilers near Memphis, Tenn., while conveying to their homes many troops returning from the seat of war.

The above are all the particulars which could be obtained by your Committee of the life of our lately deceased members.

Your Committee have also heard of the death, in former years, of the following members:—

JOHN McDONALD, of Brooklyn, N. Y., died in 1861.

JAMES E. CUNNINGHAM, of Pittsburg, Pa., died in 1863, of wounds received in one of the battles of the late Rebellion.

RICHARD FORESTER, of Brooklyn, N. Y.

Signed, J. M. MAISCH, *Chairman*.
WM. WRIGHT, JR.,
W. H. ADDERLY,
F. A. ELLIOTT,
H. N. RITTENHOUSE, *Rec. Sec.*

The report of the Executive Committee was on motion accepted.

The delegates of the different local Associations appointed from among their number the following Committee for the nomination of officers of the Association for the ensuing year:

S. M. Colcord, from the Massachusetts College of Pharmacy;
G. C. Close, " College of Pharmacy of the City of New York;
Edward Parrish, " Philadelphia College of Pharmacy;
J. Faris Moore, " Maryland " "
W. J. M. Gordon, " Cincinnati " "
Eugene L. Massot, " St. Louis " "
T. S. Wiegand, " Alumni Assoc. of the Phila. Coll. of Pharmacy.

The Chair appointed from the Association at large the following gentlemen:

Frederick Stearns, E. W. Sackrider, Charles A. Tufts.

President Gordon read his Annual Address.

ANNUAL ADDRESS OF THE PRESIDENT.

To the Members of the American Pharmaceutical Association:

GENTLEMEN,—We feel highly privileged in meeting again in this beautiful city, the centre of learning and refinement, where we have always been welcomed with so much cordiality and genuine hospitality. We rejoice to meet within her classic and historic walls, feeling that when we return to our distant homes, we shall feel that it was good for us that we had been there.

We meet this year under circumstances of no ordinary importance and significance, both as regards the time and the place.

Since our last assembling, in the Queen City of the West, the direful sounds of desolating war have ceased; the honor of the flag of our country has been vindicated; peace and union once more reign throughout the length and breadth of our land.

You will not consider me an enthusiast when I say that we ought to bless and praise our God with all our hearts, for His great mercies to us

as a nation; we ought to show forth our gratitude for His goodness to us, with the best power we possess. Allow me to congratulate you upon this most auspicious event, of such vast moment not only to our country, but also to our honored Association. May the gates of the temple of Janus, which have been open during the last four eventful years in the history of our country, and are now to mark the return of peace, remain closed forever. May the God of nations so rule the destinies of our great and glorious republic, that our citizens may never again be summoned from the walks of peace and usefulness to learn the art of war, and pour forth in seas of blood their precious lives,—thus carrying desolation and bereavement to the hearts and hearths of their once happy homes.

As members of a scientific Association, having for its main object the advancement of the members of our calling in elevating and useful knowledge, we have, as a matter of course, nothing whatever to do with politics; our boast is that we meet on the common ground of a brotherhood which interferes not with the religion or politics of any of its members. We feel, therefore, that we have nothing to do as a Convention, assembled for such purposes as I have indicated, with the war, (which is now happily closed,) other than to deplore its necessity, to mourn over the separation it has caused us, for the time being, from many of our brethren; to regret the hindrance it has been to the advancement of our cause, and to rejoice (which we do most heartily) in its termination. Many of our members, particularly in the Southern States, have been practically cut off from connection with our Association during the last four years, and their vacant places have been the cause of no little sorrow to those of us who were enabled to meet. I think I express the sentiments of every member of the Association now met in our annual conclave, when I say our doors stand open to all those who have been hindered from meeting with us, and a hearty welcome awaits them. A mere conforming to the rules in the matter of dues in arrears, is all that will be required to entitle them to this privilege, as well as to the Proceedings of our annual meetings that would be due them. The moral effect of such a reunion as we contemplate, and trust most heartily will be consummated, upon the nation at large, cannot easily be over-estimated. It will be one link, at least, in that chain of restored confidence and friendly intercourse which every true patriot and lover of his country must be anxious to witness, and is willing to do all in his power to accomplish.

The financial condition of the Association is extremely gratifying; it is entirely free from debt, and has about \$350 remaining in the treasury. This is much better than anticipated at our last meeting. The cost of publishing the Proceedings of the last Convention was about one-third more than the year previous.

The Executive Committee will make a comprehensive report of their labors since our last meeting, and also several suggestions as amendments to the Constitution, which they think desirable.

Attention is called to the large amount due by members in arrears. The amount now due by all delinquents is \$3,458, the principal portion of which is from those who are in arrears over four years.

This subject has been under consideration before, but without arriving at a conclusion as to the best means of overcoming the difficulty and preventing further losses. It has been placed before most of those in arrears, at least as far as it could be done, and the success attending it will no doubt be reported to you. There are a large number who have been elected members, and whose names appear upon the roll, that have not signed the Constitution, and some have not paid a single contribution. Printed copies of the Constitution have been placed before them all, that their membership might be perfected.

I think the time has arrived when prompt action should be taken in regard to delinquents, as due notice has been given, and no benefit can arise from further delay, such being useless to the Association,—neither contributing means nor their presence to its support.

I would suggest that the names of those in arrears over four years be removed from the roll, and placed upon a suspended list in the published Proceedings for one year, with the privilege of reinstatement at the expiration of that time, if the Constitution is signed and dues paid up. If not, their membership to cease.

The Committee on the Progress of Pharmacy present a less voluminous report than usual, caused by circumstances beyond the control of the Chairman. Any falling off in this most interesting part of our proceedings is much to be regretted, and it is hoped may yet be made perfect in time for publication.

I have not been able to confer with the Committee on the Drug Market, nor the Committee on the Pharmacopœia.

The Committee on Scientific Queries will present an ample number for investigation; and I take this occasion to urge upon all who accept subjects, the importance of investigation, and to report at the appointed time. Frequently the Association is deprived of information that would be obtained from others, by subjects being taken and never reported on.

The large tax upon spirit is one of the most important matters for our consideration, in its bearing upon the drug trade, and the manufacture of chemical and pharmaceutical preparations so largely increasing their value, making a class of articles evidently never intended to be so much enhanced in value from this cause by the framers of the internal revenue law; but no doubt this was either overlooked, or the extent to which it enters into medicinal preparations was not known to them. While none of us would interpose an objection to whatever tax the government may see fit to put upon spirit as a beverage, we think it should be exempt from taxation for chemical and pharmaceutical uses; and I have no doubt, if this subject was brought properly before the Committee of the next session of Congress, the relief desired could be obtained.

There are obvious reasons why medicines should be produced as cheaply as possible: the large consumption of them by those illy able to bear the expense, who at the time are unable to labor, and who are dependent upon it for their support, while cheapness of the means of producing will offer less temptation to deception, and insure them of better quality.

The Internal Revenue Law, in the construction placed upon it for licenses and manufacturers' tax, is another heavy burden upon the pharmacist, and, as far as my knowledge extends, not borne in proportion by any other branch of business. From three to four licenses are required to conduct the practice of pharmacy: 1st, a license as retail dealer in medicines; 2d, to retail liquors, which are officinal medicinal articles; 3d, to sell liquors in quantities over three gallons; 4th, a manufacturer's tax, if the articles made exceed six hundred dollars per annum; and six per cent. to be paid upon the articles manufactured.

A dealer in almost any other business can take out a single license, which will cover a wholesale and retail business. These, and the tax upon alcohol, should receive our earnest consideration, and an endeavor to obtain some relief.

Some interest, as well as apprehension, has been manifested in regard to the large number of Hospital Stewards who have been relieved from the army, and what the bearing may be upon the status of Pharmacy. I can scarcely conceive that the influence will be important. While those qualified for the practice of pharmacy will no doubt return to their calling, and assume a position according to their ability, those unqualified must necessarily take position according to their merit.

At the last meeting an amendment was offered to the Constitution, and laid over to an early session at this meeting, to elect a permanent Recording Secretary, at a salary of \$100 per annum, and the payment of travelling expenses to and from the place of meeting, who shall edit the Proceedings and attend to their distribution. It will be necessary to act upon this early, so as to give a chance for election, if adopted.

At our last meeting a Committee was appointed to get up a new certificate of membership. No doubt a report will be made by them.

In closing this report, it is a source of extreme gratification to be able to say, after passing through a period of over four years of war, with its necessary excitement, and the withdrawal of so many from scientific pursuits, and the consequent loss to Associations of this kind, that we present so prosperous a condition; and there can be no doubt but that from this time forward (as it has been in the past,) we shall go on in unexampled success and usefulness.

In retiring from the Chair, I tender to you all, whom I have met with so many years, and with so much pleasure, my earnest thanks for your partiality in placing me in the position I have occupied the past year, and the manner in which you have sustained me in the discharge of its duties.

W. J. M. GORDON, *President.*

The Address was, on motion, accepted, and referred to the Executive Committee for publication.

The Chairman of the Business Committee stated that one matter should have come before the reading of the address. A proposition to amend the constitution by the appointment of a permanent Secretary, lies over from the last annual meeting. The resolution in question passed at that meeting, says :

Resolved, That the subject of this amendment be laid over for action at the early session of the next annual meeting of the Association, so that, if adopted, the Nominating Committee may act in accordance with the amendment in selecting a candidate for permanent Secretary.

The rule is, Mr. President, that this session should close with the reading of your address.

The President decided that it must now be taken up and acted upon.

The Chairman of the Business Committee read the resolution concerning the amendments to the Constitution. (See page 30, minutes of 12th annual meeting.) The first question to be considered is: Shall the Constitution be amended? If it is decided in the negative, it carries the resolutions with it and the amendments will be considered lost; we shall then avoid discussion on the subject and shall get at the matter concisely.

The question was put by the chair: "Shall the Constitution be amended?" It was carried.

The chair put the question: Shall the Secretary be elected permanently? which was likewise carried.

Dr. Squibb.—It now remains to be decided whether the permanent Secretary shall have a salary, what salary, &c. I should like to hear the members' views upon that question.

Mr. Maisch.—I am entirely in favor of giving a salary, and should vote for increasing it if we were able to do so; the amount stated is insufficient to pay the Secretary for his trouble.

Mr. Parrish.—The proposition should be modified by saying, he shall receive a salary such as may be fixed from time to time by the Association.

Mr. Tufts.—I believe this view is entirely correct. If we wish to alter the amount we can do it at any time without involving an alteration of the Constitution.

Mr. Stearns desired the Business Committee to explain the object of the amendment.

The Chairman said the principal objects were, that the Association should have a fixed officer and organization to transmit business from one year to another. It is now an annual organization excepting the Executive Committee, and that only appears in a report. With a permanent secretary, there will be an officer who is conversant with the business and carries it forward from meeting to meeting. He will have possession of all papers, have charge of printing the Proceedings, and by education he will become better adapted to do the work than any other. The Proceedings would then always be published in the same place and a regular routine would be established whereby the business would be facilitated. The same course has proved useful in other organizations. The Secretary ought, of course, to be paid enough in addition to his expenses to justify him taking his time. It is intended to alter the one hundred dollars upwards. It might be said that the Secretary shall receive a salary to be determined each year, after the duty is performed.

Mr. Maisch.—The Association is in correspondence with European Societies. If they send books or papers, they do not know who to send them to, and we do not know who is to receive them. A permanent Secretary would be the proper officer for this intercourse.

Dr. Squibb.—A permanent Secretary represents the Society and would be the connecting link between the members, the committees and the society at large.

Mr. Parrish moved that the one hundred dollars should be stricken out, on the ground that the sum makes the position no object.

Dr. Squibb.—This is intended to be a complimentary sum which might reimburse the Secretary for his time. Another phrase says, "and the amount of his actual travelling expenses in addition to his salary." The Association might change this so as to make it include not only the travelling expenses but also hotel bills. Let us make the one hundred dollars complimentary for the position. No one will take it except as a post of honor. The American Medical Association, which is parallel with this, has a permanent secretary at a salary of fifteen hundred dollars a year.

Mr. McCollin desired to alter the phrase to include hotel expenses and leave the salary as it is.

Dr. Squibb.—It has been suggested to alter the phraseology so as to include hotel expenses. I move that the alteration be made so as to read "shall receive from the Treasury an annual salary and the amount of his travelling expenses in addition to his salary." This will include all his expenses.

The point was raised whether this alteration should not lie over until to-morrow. The chair ruled that under the Constitution it can be made and acted on without delay.

The motion as altered was then carried, no votes being cast in the negative.

The Chairman stated that the question next in order would be the duties of the permanent Secretary, which are given in the following resolution :

Resolved, That Section 4 be amended by substituting after the words "received by the Association" the words "and shall be charged with editing, publishing and distributing the Proceedings of the Association, under the direction of the Executive Committee," for the remainder of the sentence.

This motion to amend was put and carried unanimously.

The adoption of these amendments carries with it the alteration of the numbering of the sections, as stated in the following resolution :

Resolved, That the present Section 2, be called Section 3, and that the numbering of the remaining Sections of Article III. be corrected in accordance with these amendments.

Article III. of the Constitution as altered by the foregoing amendments now reads as follows :

SECT. 1. The officers shall be a President, two or more Vice-Presidents, a Recording Secretary, a Corresponding Secretary and a Treasurer, who shall, with the exception of the Recording Secretary, be elected annually, and shall hold office until an election of successors.

SECT. 2. The Recording Secretary shall be elected to hold office permanently during the pleasure of the Association ; he shall receive from the Treasurer an annual salary and the amount of his travelling expenses in addition to his salary.

SECT. 3. Like Sect. 2 of the old Constitution.

SECT. 4. Like Sect. 3 of the old Constitution.

SECT. 5. The Recording Secretary shall keep fair and correct minutes of the Proceedings of the meetings, and carefully preserve on file all re-

ports, essays and papers of every description received by the Association, and shall be charged with editing, publishing and distributing the Proceedings of the Association under the direction of the Executive Committee. He shall furnish the Chairman of every special Committee with a list of its members and a copy of the minute of its appointment, and shall notify every member of the time and place of each annual meeting. He shall be a member of the Executive Committee.

SECT. 6. Like Sect. 5 of the old Constitution.

SECT. 7. Like Sect. 6 of the old Constitution.

The Chairman of the Nominating Committee requested its members to meet immediately after the meeting adjourns.

A communication was received from Mr. T. G. Wilkins, Apothecary of the Massachusetts General Hospital, inviting the members of this Association to visit that institution at 11 A. M., Wednesday.

Mr. Markoe, in behalf of Professor Gray, extended an invitation to the members to visit the Botanical Garden in Cambridge.

On motion these invitations were accepted, and the thanks of the Association tendered to both gentlemen.

On motion, the Association adjourned to meet to-morrow morning at 9 o'clock.

Wednesday morning, Sept. 6th—Second Session.

President Gordon called the meeting to order. The Minutes of the previous meeting were read and adopted.

After calling the roll, the Executive Committee proposed the following gentlemen for membership:

C. H. Lowe, Cambridgeport, Mass.	Alf. Daggett, Jr., New Haven, Conn.
Robert B. Rhodes, Brooklyn, N. Y.,	Michael J. Lauer, Baltimore, Md.
Jas. E. Blake, New Bedford, Mass.,	

The chair appointed Messrs. J. T. Shinn and Edw. C. Jones to act as tellers, who reported the ballots in favor of the candidates.

A communication from Mr. John L. Hunnewell was received and read.

Dr. Squibb.—This communication was handed to Mr. Maisch, and by him passed to the Business Committee. It contains several mistakes in its statements; it is neither necessary nor judicious to call them up or notice them. The matter has been duly considered and careful action taken thereupon. I therefore move, as

Chairman of the Business Committee, that the paper be received and filed.

The motion was seconded and carried.

Professor J. F. Moore now read the Treasurer's report, as follows :

TREASURER'S REPORT.

BALTIMORE, Sept. 2d, 1865.

To the Officers and Members of the American Pharmaceutical Association :

In accepting the position of Treasurer for a second term, it was not without forebodings that my final report would show a Treasury in debt—owing to the constant and very considerable advance in the cost of publication, which my report will indicate is at present nearly double that of previous years.

It affords me pleasure to be able to inform you, that the book has been printed, and all claims against the Association paid, and the handsome balance of \$326.11 on hand. The amount disbursed is \$1497.60, of which \$74.85 should be charged to the report of 1863—'64, but was not, in consequence of the Chairman of the Executive Committee having omitted to render the bills, until after the Report had been closed and sent to the convention.

It has been the custom to present bills during the latter part of the fiscal year for which they are due—a credit apparently having been extended to the Publishing Committee, as they did not pay the bills as the work progressed. Business now being conducted on the cash principle, I found it necessary to change the time for distributing these bills, in order to anticipate payments. This met with some opposition, but as a general rule the members responded.

As the cash system is likely to continue, it will be well for the Association to determine the time for presenting the bills, which experience indicates to be the first of February. At present there is not a copy of the Certificates of Membership on hand; the six, remaining from last year, have been sold, and delivered to new members; seventeen more have been ordered and paid for, and many other members are anxious to procure them. At the last meeting of the Association a Committee was appointed to design and issue a new form of Certificate of Membership; of this contemplated issue, no copies have been placed at my disposal, and further delay may occasion much inconvenience, as many communications have been received on this subject.

The Treasurer in connection with Mr. Moore formed a Committee, by your appointment, "to examine the books in regard to all arrearages and report to the next annual meeting the number and names of members who may be in arrears, and the condition under which they occurred." This report will be found annexed, marked A.

By referring to the early numbers of the Proceedings you will notice

that the membership has increased from 44 in 1853 to over 700 in 1865. The report of the Treasurer for 1853 is not recorded, but a note from the Executive Committee asserts that the receipts did not meet the expenditures. The same condition existed in 1854; of 1855 I have no report, in 1856 the total amount received was \$110, and expended \$85.75. Comparing this with the present report, the increased labor of the Treasurer may be appreciated. The correspondence is very extensive, and can be estimated from the simple fact alone, that the expenditure for stamps amounted to over \$30 during the past year.

Having no purpose that my name shall be used for re-election, I deem it due to gentlemen who may succeed me in this trust, to suggest that in future the expenses of the Treasurer's attendance at the annual meetings be defrayed by the Association.

I cannot close this report without acknowledging my indebtedness to the Chairman of the Executive Committee for his gentlemanly courtesy and co-operation in the labor performed, thus enabling me to make so favorable a report, and to my successor I cannot wish better fortune than to have Prof. J. M. Maisch as Chairman of the Executive Committee.

J. BROWN BAXLEY, *Treasurer.*

Statement of Receipts and Disbursements of the American Pharmaceutical Association for the year ending September 2d, 1865.

RECEIPTS.

1864.

Sept.	15.	To balance on hand as per last report,	\$ 463 30
1864 & '65.	"	amount received from Contributors,	1232 02
"	"	" " " Sale of Proceedings,	50.39
"	"	" " " Certificates,	78 00
<hr/>			
			\$1823 71

DISBURSEMENTS.

1864.

May	17.	No. 1.	A. B. Taylor, late Chairman of the Executive Committee,	43 02	
"	20.	" 2.	E. Ketterlinus, Wood Cuts, &c.,	16 33	
Sept.	10.	" 3.	B. Westerman & Co.,	2 00	
"	14.	" 4.	Dodge & Grattan, Letter Circular,	7 75	
"	19.	" 5.	P. W. Bedford, Postage and Stationary,	5 75	
				<hr/>	\$74 85
Oct.	11.	" 6.	Adams & Co. Express,	1 25	
Nov.	11.	" 7.	J. M. Maisch, Chairman of the Executive Committee,	250 00	
1865.					
Jan.	18.	" 8.	J. M. Maisch Chairman of the Executive Committee,	30 50	

Jan.	31.	No. 9.	John W. Woods, Printing,	1 50	
Feb.	18.	" 10.	J. M. Maisch, Chairman of the Executive Committee,	550 00	
March	1.	" 11.	J. B. Baxley, Expenses, Stamps, &c.,	35 40	
"	15.	" 12.	J. M. Maisch, Chairman of the Executive Committee,	37 40	
"	11.	" 13.	Camden & Amboy Transp. Co.,	1 50	
April	25.	" 14.	J. Brown Baxley, Stamps, &c.,	15 00	
May	9.	" 15.	J. M. Maisch, Chairman of the Executive Committee,	425 00	
"	9.	" 16.	J. M. Maisch, Chairman of the Executive Committee,	18 10	
"	26.	" 17.	F. H. Gallagher, filling Certifi- cates,	3 00	
July	1.	" 18.	do. do. do.	7 00	
Aug.	8.	" 19.	B. Westerman & Co.,	13 25	
"	12.	" 20.	J. M. Maisch, Chairman of the Executive Committee,	28 85	
"	11.	" 21.	P. W. Bedford, Sundries,	5 00	1422 75
					<hr/> 1497 60
				Balance on hand,	<hr/> \$326 11

E. E.

Respectfully submitted,

J. BROWN BAXLEY, *Treasurer A. P. Association.*

Names of Members who have ordered and paid for Certificates of Membership but have not been furnished by Treasurer, he not having any.

C. H. Bode,	Cincinnati, Ohio,	. . .	paid for.
Otto Heineman,	" "	. . .	" "
John T. Hanning,	Covington, Kentucky,	. . .	" "
Wm. F. Reifsnider,	Cincinnati, Ohio,	. . .	" "
George Eger,	" "	. . .	" "
Wm. Kent,	Fort Dodge, Webster Co., Iowa,	. . .	" "
Joseph Abel,	Pittsburg, Pa.,	. . .	not paid for.
George Wilcox,	Columbia, Hamilton Co., Ohio,	. . .	paid for.
C. M. Helman,	Cincinnati, Ohio,	. . .	" "
Henry B. Morris,	New York, N. Y.,	. . .	" "
W. H. Crawford,	St. Louis, Mo.,	. . .	not paid for.
Eugene Alex. Houston,	Saratoga Springs, N. Y.,	. . .	" " "
C. Lewis Diehl,	Louisville, Ky.,	. . .	paid for.
Griffith Rees,	Cincinnati, Ohio,	. . .	" "
George A. Kelley,	Alleghany, Pa.,	. . .	not paid for.
Nathan Dikeman,	Waterbury, Conn.,	. . .	paid for.

Erastus N. Champlin,	Saratoga Springs, N. Y.,	paid for.
J. L. A. Greve,	Cincinnati, Ohio,	" "
	J. BROWN BAXLEY,	Treasurer.

Baltimore, Sept. 2d, 1865.

On motion of the Business Committee, the Treasurer's report was accepted and referred to an Auditing Committee.

Prof. Parrish called the attention of the Association to a remark in this report in regard to the labor and expense attendant upon that office, and moved that the Auditing Committee be instructed to consider the matter and ascertain whether something might not be done to remedy the evil.

Dr. Squibb seconded the motion.

The motion was carried and the chair appointed Messrs. Stearns, Moore and Haviland the Committee to audit the Treasurer's accounts.

The report of the Committee on a new form of Certificate of Membership being called up, the Chairman, Mr. A. B. Taylor, read it as follows :

To the American Pharmaceutical Association :—

The Committee appointed to get up a new Certificate of Membership respectfully report :—

That early after their appointment, they consulted together in reference to the particulars of the new certificate; the wording to be used was agreed upon, and through the kindness of a friend of one of the members of the Committee, a handsomely executed sample of what the Committee thought desirable was executed.

The Committee were desirous of having the certificate engraved either on copper or steel, but upon attempting to have it done according to sample no good engraver could be found to undertake it. All the best talent had been engaged by the American Bank Note Company, who were so busy that they would not undertake the job.

It was then concluded to have it lithographed, and an estimate was obtained from Mr. Ketterlinus of Philadelphia, who agreed to do the work in the best style for \$50. The price was agreed to and the certificate was placed in his hands.

The Chairman of the Committee could get no definite information respecting the progress of the work, but was told from time to time that it was getting ahead; and only learned some two or three weeks since that it had not been commenced. The excuse given was, that the workman who was expected to do the work had left their employ, and they could not get any one to whom they would trust it; (the stipulation having been, that the engraving was to be done in the best style of art.)

The Committee would willingly take farther charge of the matter, or would cheerfully place it in the hands of any other Committee this Association might appoint; but inasmuch as the certificate has not been commenced, the Committee would suggest that the Association had better direct whether it shall be engraved on stone or on steel.

An estimate was obtained from the American Bank Note Company, last week, for engraving it on steel in the best style. They are not so busy now as when the former application was made to them, and would agree to furnish the engraving in eight weeks for \$150.

A. B. TAYLOR, EVAN T. ELLIS, JAMES T. SHINN,	} Committee.
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September 5th, 1865.

The Business Committee moved that the report be accepted, this Committee continued, and that their suggestion to have the engraving executed on steel be adopted, also the sample exhibited by the Committee. This matter has been very carefully considered by the Committee, and need not take up our time.

Mr. Taylor wished to obtain the sense of the meeting as to whether the Certificates should be printed on paper or on parchment; the price of printing on paper is about 50 cents, on parchment \$1.50.

Mr. Parrish should be sorry to see the resolution passed in the form offered, which would prevent the Committee from making improvements upon the sample. I move as an amendment that the report be accepted, and the Committee continued, to have the Certificate engraved in steel or copper during the coming year.

Dr. Squibb explains the action of the Committee and accepts the amendment.

Mr. Shinn said it might be well to have the Certificate printed on paper and parchment, and make a difference in price to those who wish the parchment.

The motion as amended was carried.

Mr. A. B. Taylor moved that Mr. P. W. Bedford be added to the Committee, which was carried.

The Committee appointed yesterday to nominate officers for the ensuing year, now presented the following report:

For President,

HENRY W. LINCOLN, . . . Boston, Mass.

For Vice Presidents,

1st. GEORGE C. CLOSE, . . . Brooklyn, N. Y.

2d. E. W. SACKRIDER, . . . Cleveland, Ohio.

3d. C. A. HEINITSH, . . . Lancaster, Pa.

For Treasurer,

CHARLES A. TUFTS, . . . Dover, N. H.

For Recording Secretary, (permanent,)

JOHN M. MAISCH, . . . Philadelphia, Pa.

For Corresponding Secretary,

P. W. BEDFORD, . . . New York.

Executive Committee,

THOMAS S. WIEGAND, . . . Philadelphia, Pa.

JOHN BUTTERWORTH, . . . Boston, Mass.

F. W. SENNEWALD, . . . Saint Louis, Mo.

T. H. BARR, . . . Terre Haute, Ind.

J. M. MAISCH, (*Rec. Sec.*), ex officio, . . . Philadelphia, Pa.

Committee on the Progress of Pharmacy,

ENNO SANDER, *Chairman*, . . . Saint Louis, Mo.

THEODORE KALB, . . . St. Louis, Mo.

G. F. H. MARKOE, . . . Boston, Mass.

FERRIS BRINGHURST, . . . Wilmington, Del.

P. W. BEDFORD, (*Corres. Sec.*), ex officio, . . . New York, N. Y.

Committee on the Drug Market,

SAMUEL M. COLCORD, *Chairman*, . . . Boston, Mass.

J. J. THOMSEN, . . . Baltimore, Md.

WILLIAM A. BREWER, . . . New York.

EZEKIEL H. SARGENT, . . . Chicago, Ill.

W. J. M. GORDON, . . . Cincinnati, Ohio.

Committee on Scientific Queries,

WILLIAM PROCTER, JR., *Chairman*, . . . Philadelphia, Pa.

EDWARD S. WAYNE, . . . Cincinnati, Ohio.

EDWARD PARRISH, . . . Philadelphia, Pa.

R. H. STABLER, . . . Alexandria, Va.

Business Committee,

DR. E. R. SQUIBB, *Chairman*, Brooklyn, N. Y.
F. STEARNS, Detroit, Mich.
J. F. MOORE, Baltimore, Md.

Mr. Maisch.—I desire to make a statement in regard to the use of my name for Permanent Secretary. I had no idea that it would be presented in connection with this office, although when the matter was brought up last year, some members spoke to me about it. I then said that I should decline the nomination. I feel the same way now. The duties are very arduous, because they combine the duties of two officers we have had heretofore. I would therefore suggest that some other member be nominated for Secretary.

Mr. Procter.—I think we had better take the report as it is. There is another point, however, in this report. Mr. Sander has been nominated as Chairman of the Committee on the Progress of Pharmacy. Whether he can or will take the Chairmanship of this Committee, I do not know; the Committee might fail without him. He is a very energetic man, and may take it for the Association. I think, however, that such considerations should be left to the Nominating Committee. I hope that in regard to the nominations we shall accept the report of the Committee, and that Mr. Maisch will overlook individual feelings and preferences, and look only to the good of the Association.

Dr. Squibb.—I hope that Mr. Sander may be persuaded to accept the Chairmanship of this Committee. We really need him in this capacity.

Mr. Colcord.—I would state, Mr. President, that we have on this Committee three men, each of whom is capable of doing the work.

On motion, the report was accepted, and the Association then proceeded to ballot for President, Messrs. Evan T. Ellis and S. M. McCollin acting as tellers; they reported the unanimous election of Mr. Henry W. Lincoln as President of the Association for the ensuing year.

Prof. J. F. Moore moved that the President be authorized to cast, in the name of the Association, the ballot for the remaining

officers and committees. The motion was carried, and the tellers reported all the nominees duly elected.

The President appointed Messrs. Procter and Stearns as Committee to conduct the President elect to the Chair, who was introduced by Mr. Gordon, as follows :

Gentlemen of the American Pharmaceutical Association,—I take great pleasure in introducing Mr. Lincoln, of Boston, as your President for the ensuing year.

Mr. Lincoln, before taking his seat, said :

Members of the American Pharmaceutical Association :

GENTLEMEN,—For this unexpected and undeserved token of your approbation, you will please accept my warmest thanks. I had hoped to be allowed to remain a silent listener to your interesting debates and discussions, without taking an active part ; and it is with many forebodings that I accept the honor conferred. I shall try, however, so to perform the duties which shall devolve upon me, as not to interfere with the welfare of the Association. With the larger lights which have gone before me in this Chair, it should not be easy to go amiss. But I shall rely mostly on the kindness which you have shown in electing me as your presiding officer, to carry me safely through the duties of the office.

In the annual meetings of this Association, Boston has received a two-fold honor,—and the occasions are not dissimilar. The first meeting held here was the first under the Constitution and name, held at a time when the policy of the Association was not fully developed, and when discord and secession, under the garb of “good of its kind,” reared their heads and threatened the life of the young genius of Pharmacy. The question was promptly met, fully and warmly discussed, and laid away to be at rest forever. The second honor is the present, when, after a long four years’ civil war, our national government, in its contest with that monster which threatened its Constitution and life, has met the question, promptly and warmly, and fully discussed it, and laid it away,—it is to be hoped forever.

As, in the first instance, members of the Association who had differed from one another, and warmly discussed the question at issue, quickly acquiesced in the decision of the majority, and have ever since continued active and valuable members, so in the latter case, we hope, now that the clouds are brushed away from the political horizon, we may have the aid of those who have been prevented from meeting with us for the last four years, and, under the united help of all, the Association will continue its career of prosperity, until its roll of members shall number its thousands, and the time be not far off when the distant shores of the Pacific shall welcome the Association at one of its annual meetings—

“The North and South together meet,
And East and West their tribute bring.”

As a member of the Massachusetts College of Pharmacy, and speaking for them, I bid you a hearty welcome to these halls, where you have met once before, and to this city, at your third meeting here. We hope that your stay here will be pleasant and profitable to you, and that you will return to your homes in safety, feeling refreshed and benefitted by your scientific and social gathering.

The Business Committee moved to tender the thanks of the Association to the retiring President, for the able and faithful discharge of his duties; the motion was carried.

The other officers elect now assumed their respective duties, and, on motion, it was resolved that the thanks of the Association are due to the retiring officers generally.

In accordance with the recommendation of the Business Committee, it was agreed that the reading of scientific reports proceed parallel with the other business.

Prof. J. Faris Moore read the preliminary remarks, and some extracts of the Report on the Progress of Pharmacy, the classification and arrangement being similar as in former reports.

On motion, this report was accepted and referred back to the Committee, to have it completed and then turned over to the Executive Committee for publication.

The report of the Corresponding Secretary was read by Mr. Bedford, accepted, and referred to the Executive Committee.

The Secretary, while Chairman of the Executive Committee during the past year, had received, through the Smithsonian Institution, the following work, which was now laid before the Association: *Bulletins des Séances de la Classe des Sciences of the Académie Royale de Belgique*, for the year 1863.

Also a letter, dated January 2, 1865, from Mr. C. Wiedmann, Librarian of the Royal Bavarian Academy of Sciences at Munich, acknowledging the receipt of the Proceedings of the American Pharmaceutical Association for 1863, requesting a complete set of all the Proceedings, and offering the Bulletins of the Royal Bavarian Academy in exchange.

It was moved, and resolved unanimously, that the Secretary be directed to send to both Academies as complete a set of the Proceedings of this Association as the stock on hand will admit.

Mr. Bedford stated that full sets of the Proceedings had been requested by the Mercantile Library Association and the Astor

Library of New York, and suggested that the Secretary furnish them likewise with complete sets.

Dr. Squibb stated that the Executive Committee were authorised to furnish copies to such institutions.

The Secretary stated that he had just received from Professor Parrish a letter sent from St. Petersburg, Russia, through the Smithsonian Institution at Washington. The following is a translation of the same :

St. Petersburg, May 10, 1886, new style; (May 4, old style.)

MUCH RESPECTED SIR :

The various Pharmaceutical Associations of Europe have resolved to hold an International Congress of Pharmaceutists at Brunswick, for the purpose of effectually removing many evils existing in the field of pharmacy. (See *Pharmaceutische Zeitschrift für Russland, Intelligenzblatt*, No. 1, which is enclosed.)

The great distance between America and Europe renders it perhaps impossible to see your pharmaceutical delegates at the Congress, though the appearance of deputies of American Societies could be but favorable to this international cause. Should you not be able to come or send somebody, I would request you to give me as soon as possible, at any rate previous to the meeting, some information about the condition of North American pharmacy, with particular regard to the ten questions of the programme. Should you not be able to correspond in the German, I would beg you to write in the English language. The letter need not be prepaid. I remain respectfully,

Your obedient servant,

DR. G. A. BJÖRKLUND,

Secretary of the Pharmaceutical Society, and Apothecary at St. Petersburg, Russia.

P. S.—A letter between here and America takes about four weeks to arrive; consequently, if you write in July, I shall receive it in time. I shall leave here for Brunswick in time to arrange some preliminaries.

The letter of Prof. Joseph Henry, Secretary of the Smithsonian Institution, states: "The programme referred to did not accompany the letter."

Mr. Coloord moved, and it was seconded, to instruct the Corresponding Secretary to answer the letter of Dr. Björklund in German.

Mr. Maisch moved to amend by striking out the words, "in German," and the amendment being carried, the vote was taken on the motion as amended, which was thus adopted.

Mr. Alfred B. Taylor moved to refer to the Executive Com-

mittee, with power to act, the propriety of publishing the (hitherto unpublished) minutes of the first meeting held in 1851, and of reprinting the Proceedings of this Association for the years 1852 and 1855.

After some discussion, the resolution passed.

The report of the Committee on the Drug Market being now in order, Mr. Bedford stated that the report was not ready to present to the Association. Prof. Mayer being very much engaged in other matters, is not familiar enough with the drug market of the country to make a correct report. He has succeeded in obtaining some statistics, which may be incorporated in it. Mr. Bedford, therefore, moved that the Committee be excused from making a report the present year.

Prof. Procter suggested to allow the Committee time to finish it, and then refer it to the Executive Committee.

Dr. Squibb.—I think that if we adopt this course in regard to unfinished papers, we shall seriously embarrass the Secretary. This Association has passed a resolution requiring that all papers presented shall be complete. I should like to see this rule applied in all cases. In this case, I do not think that our action will be at all amiss if the Association relieves the Chairman of the Committee by excusing him from performing what would, after all, be only a nominal report. He has gone to work and collected statistics, but they are given in value, not in quantities. The Chairman is an industrious man, who does not desire to shirk duty. He told me that the report would be merely a paper collected from various sources, which would fill up the volume, but would have little intrinsic value.

Mr. Maisch.—When I proposed the appointment of a Committee on the Drug Market, I thought it would be proper that only such persons should be appointed on the Committee as are actually engaged in the drug business. The report should be made up of matter pertaining to the market. The Association made a very injudicious selection two years ago when they appointed me Chairman, and last year they made a mistake in selecting Prof. Mayer. This year the selection has been a very good one, and we shall doubtless have an excellent report.

The motion of Mr. Bedford to excuse the Committee on the Drug Market from reporting the present year, was carried.

Prof. Procter read the report of the Committee on Scientific Queries, which, on motion, was accepted, and the Committee continued, to procure the acceptance of the proposed queries.

Professor Moore submitted the report of the Committee on Arrearages.

The report consists of a list of members in arrears, footing up in amount the sum of three thousand, four hundred and fifty-eight dollars (\$3,458.00). The report then goes on:—

The above represents the whole indebtedness to the Association. The Committee deem the wholesale election of members at our annual meetings as a pernicious practice, and one which should be in some manner restricted. Many whose names appear on the roll, claim to have had no knowledge of their election until their bills for dues were presented.

The Committee would suggest that the names of all members residing in such States as could be reached by the mails during the past four years, and who have failed to sign the Constitution, and are over three years in arrears, be stricken from the roll; those living in the southern States, who could not be reached by the mails, be granted a further indulgence. It is very important that certificates of membership held by parties subject to expulsion, should be returned; but in view of the fact of the Association not being chartered, so as to obtain the same and the dues by a process of law, they are unable to suggest any plan, but must leave it to the combined wisdom of this Association to adopt some mode of obtaining them.

Respectfully submitted,

J. PARIS MOORE,
J. BROWN BAXLEY,
Committee.

Professor Moore stated that all those four years and over in arrears had been written to both by the Executive Committee and Treasurer.

Mr. Maisch said that the greater part of the difficulty arose from the want of strictness in examining applications for membership.

Dr. Squibb.—We have conducted our elections in a very loose manner. The result of large lists is almost certain to be seen in an increased amount of arrearages. If a committee is appointed, they can weigh this matter according to the Constitution, and report some resolutions in a definite form by which the Association can clear the report of delinquent members. We should have a plan whereby such accumulation will be prevented. On

the part of the Business Committee, I offer the following resolution :

Resolved, That the report of the Committee on Arrearages of Members on the Treasurer's books be referred to a Committee consisting of Messrs. Moore, Colcord, Haviland, and the present Treasurer, with instructions to report resolutions which will as summarily dispose of these memberships as may be possible ; and that the references and lists on this same subject from the report of the Executive Committee, be also referred to this Committee, to be embraced in their action.

The resolution was adopted unanimously.

A written invitation was received and read, signed by the druggists and apothecaries of Detroit, Mich., to hold the next annual meeting at that city. On motion, the invitation was received, with thanks, and for the present laid on the table.

Mr. Eugene L. Massot, on the part of the pharmacutists of St. Louis, invited the Association to meet next year at St. Louis. A similar invitation for New York was extended by Mr. Bedford.

On motion of the Business Committee, it was resolved to proceed with the reading of scientific papers.

QUERY 2d, regarding the value of the roots of *Gillenia trifoliata* and *stipulacea* as a substitute for *Ipecacuanha*, being called up, Mr. E. A. Ebert, who had accepted it, explained that he could not finish his experiments in time for the present meeting, owing to his receiving the proper material too late. He desired to have the subject continued to him another year, and offered, in lieu of an answer to Query 2d, to read, at the next session, a paper on commercial *Oleum succini*.

On motion, the subject of *Gillenia* was continued to Mr. Ebert, and his offer of substituting another paper at this meeting, was accepted.

QUERY 3d.—The salts of *Sanguinarina* are employed, to a considerable extent, in some of the western cities. How do they compare with the Galenical preparations of the root, and what are their best combinations and modes of administration ?

It had been accepted by Prof. R. Barthalow, of Cincinnati, but no answer being received, it was, on motion, dropped.

QUERY 5th, inquiring into the profitable cultivation, in the United States, of Poppy, for the production of Opium and Poppy

seed oil, had been accepted by Mr. Edwin R. Smith, of Monmouth, Ill. Mr. A. E. Ebert read a letter from Mr. Smith, in which he explained that excessive and continued rains during the spring had interfered with the raising of the poppy, and that ill health prevented him from making the necessary experiments.

Mr. Smith was, on motion, excused from answering the query.

Dr. Squibb.—I hold in my hand a specimen of Opium, made from poppy grown in Virginia, in the neighborhood of Lynchburg, by Powhattan Robertson. It is understood that large quantities were made and used in the medical practice of the Southern armies, when they were prevented from procuring from abroad a sufficient supply of the drug. I would like to have the Association receive it, and refer it to Israel J. Grahame for examination; if he is willing to undertake that matter, it would doubtless be very acceptable to the Association. There is no doubt about its authenticity; it came directly, without passing through second hands. I have heard it said that we could cultivate opium in this country; it would be a great advantage.

Mr. Markoe.—I question whether it can be profitably done, on account of the cost of labor. In the Orient there is no such difficulty.

Prof. Procter.—I should not look upon the cultivation of opium so much in its commercial aspect.

Prof. Parrish.—That should be the principal question. It is said that we can produce opium containing twice as much morphia as that produced in the East. The chief question is whether it can be produced cheap enough for commercial purposes.

Dr. Squibb.—I have heard that the culture of opium was attempted in Alabama and in Florida, in the neighborhood of Apalachicola, to a considerable extent. It was found to be deleterious to the field hands, and was abandoned on that account in some localities. That large quantities were produced, seems to be indisputable.

Mr. Colcord.—Mr. President, I have a young friend here who has bought and used opium manufactured in New Hampshire.

Mr. Henschman.—During the war of 1812, when opium was very scarce, some parties produced it in New Hampshire, and it

sold from ten to twelve dollars a pound. It was then of very good quality. After he had established a market, the producer manufactured a very good looking article but much inferior.

Prof. Grahame promised to try to report next year.

QUERY 6th, in regard to the profitable production in this country of citric acid from currants, gooseberries or tomatoes, had been accepted by Mr. H. N. Rittenhouse; he not being ready to report, the subject was, on motion, continued to him another year.

QUERY 7th.—Can peach kernels be profitably used to procure the fixed and volatile oil of almonds?

QUERY 8th.—Commercial honey is much adulterated with or substituted by artificially prepared syrup; how can the fraud be detected?

Both queries had been accepted by Mr. E. S. Wayne, of Cincinnati; no answers being received, both were, on motion, dropped.

QUERIES 9, 10 and 11 were passed over for the present, Mr. Bedford being absent.

QUERY 12, regarding the causes of the decomposition of syrups and other vegetable solutions, &c., accepted by Mr. E. S. Wayne, was not answered. It was, on motion, likewise dropped.

QUERY 13th.—In what preparations may glycerin be used to prevent the deposition of apotheme? What is the minimum quantity that will answer the purpose, and will such preparations bear dilution? In answer thereto Mr. A. B. Taylor read an interesting essay, which was, on motion, accepted and referred to the Executive Committee for publication.

QUERY 14th, in regard to the substitution of alcohol by glycerin in extracting drugs for pharmaceutical preparations, was answered by Mr. W. J. M. Gordon; the paper was, on motion, accepted and referred for publication.

Regarding query 15th.—Is the cultivated valerian produced in New England, of equal quality with that imported from England and Germany, &c.? Mr. T. Doliber, of Boston, remarked that he had promised to answer the query for Mr. Markoe, who had accepted it; that he had instituted experiments which, however, had not proceeded far enough to warrant a report at present;

he desired to have the subject continued to him another year, which request, on motion, was granted.

QUERY 16th, on the use in pharmacy of the so-called naphtha and benzine of coal oil, which had been accepted by Mr. A. P. Sharp, was not answered; on motion, it was dropped.

QUERY 17th. What indigenous article of the *Materia Medica* can be properly and profitably cultivated? No answer was received from Mr. W. S. Merrill, and the query, on motion, was dropped.

When query 18th, on fermentation and cryptogamic vegetation in connection with drugs and pharmaceutical preparations, was called up, Mr. McCollin stated that Mr. G. J. Scattergood had made many experiments, but that his business prevented him from giving this important subject much of his time, and that for this reason he could not promise to finish the investigation in a given period.

It was moved and seconded that the same subject be continued to Mr. George J. Scattergood, with the request to finish it and report on it at his leisure. The motion was carried.

No answer was received from Prof. F. F. Mayer, to whom Query 19th, on the production of atropia from stramonium, had been continued. On motion, the query was continued to the same gentleman for another year.

QUERY 20th, on the production from *Liquidambar styraciflua* of a preparation like commercial storax, was answered by Prof. Procter. On motion, the essay was accepted, and referred to the Executive Committee for publication.

Prof. Moore remarked that sweet gum was produced in the lower counties of Maryland; a student of the Maryland College of Pharmacy had examined it, and found it to contain no benzoic, but considerable quantities of cinnamic acid, thus corroborating the results of Hanbury and those of Prof. Procter.

The specimens exhibited by Prof. Procter were two samples of cinnamic acid, and two of the balsam, with sample of the bark.

The reading of an answer to Query 21st was deferred until this afternoon.

QUERY 22d.—What are the best vessels in which to dispense ointments and cerates, combining fitness with elegance and accu-

racy? and what is the best plan for keeping this class of preparations in the dispensing shop, so as to retard their tendency to oxidation?

Mr. Wm. S. Thompson, in answer thereto, sent a paper, which was read by Prof. Moore. On motion, it was accepted, and referred to the Executive Committee for publication.

Prof. Moore.—I would state, Mr. President, that in Baltimore it is utterly impossible to get lard that, in the coolest weather, cannot be dipped out with a spoon. All the lard contains water and salt.

Prof. Procter stated that in a store in Philadelphia there was an arrangement for keeping ointments cool, like a dumb-waiter, rising from and sinking into the cellar.

The President stated that he had such a contrivance in operation at his place, and invited the Association to call and see it.

Prof. Grahame's custom has been to buy the leaf and render the lard himself.

Mr. Butterworth obtained a sediment from lard which he considered lime, but did not examine it.

Mr. Maisch.—At the U. S. Army Laboratory, large quantities of lard have been used. At first, we obtained it containing from ten to twelve and a half per cent. of water, kept mixed by the addition of carbonate of potassa, sometimes borax. We finally refused to receive such lard, and afterwards had no difficulty to obtain it free from water. Water makes it whiter and more saleable.

Dr. Squibb.—There is another reason for the fluidity of lard. The fat of the outer layers under the skin is always softer, containing more olein. The best lard is made from what are called the "leaves," the thick fat surrounding the intestines, and is much firmer. The manufacturers do not separate the leaves from the other portions of fat, and this causes more or less fluidity. Another reason for the difference in lard is the manner in which the hogs are fed; slop-fed hogs yield an inferior lard, while those which are corn-fed always yield, with proper attention, a good lard.

Prof. Moore.—What is called leaf-lard in Baltimore is really lard partly deprived of olein by pressure.

Dr. Squibb.—There is an article called perfumer's lard, free from odor, white, and almost of the consistence of soft tallow. It is made in England, probably by pressing and washing with water on an inclined slab.

Mr. Massot buys the leaf, and renders the lard.

Prof. Procter.—Some English writers accuse the Americans of adulterating lard with as much as 20 per cent. of potatoes, for the purpose of increasing the weight.

The question was asked whether perfumer's lard did not undergo a preliminary treatment with salt and alum.

Mr. Close.—I have heard that lard for perfumers' use is subjected to a steam-heating process. The same process was patented in this country by Mr. Grace, and lard is or was manufactured that way in New York.

On the value of the flowers of *Maruta cotula* and *Leucanthemum vulgare* as a substitute for the so-called "Persian Insect Powder," which is the subject of Query 28d, Mr. Markoe had been unable to make any experiments, and requested to be excused from further investigation; the request, on motion, was granted.

The same gentleman presented a paper in answer to Query 4th, Which process for camphor water is to be preferred, that of the U. S. Pharmacopœia or of the British Pharmacopœia? The paper was read, and, on motion, accepted, and referred for publication.

The Business Committee proposed that the Chair appoint a Committee of three to examine specimens. The motion was seconded and adopted.

Prof. Edward Parrish exhibited an apparatus for filtering, by the peculiar construction of which, the air is exhausted from the receiving vessel.

Dr. Squibb stated that he had filtered under pressure, and found it to answer very well; but for percolation he considered pressure inapplicable.

Prof. Parrish.—In percolation, the liquid is absorbed by the vegetable matter by capillary attraction; this is the natural process, which cannot be forced.

Mr. Colcord has percolated under a pressure of 40 lbs. to the

square inch, and at all temperatures, almost from the freezing point to 240° F.; he thinks the principle must be abandoned, since the results obtained during two or three years were without any practical advantage.

Prof. Parrish gave an account of various experiments made with the apparatus upon collodion, different oils, ether and syrups; he illustrated its usefulness by filtering a quantity of simple syrup, containing a large quantity of dust and sediment.

It was moved and seconded that we now adjourn to meet this afternoon at four o'clock.

The motion was carried.

Third Session.—Wednesday, Sept. 6th.

The Association was called to order at 4 o'clock, P. M. The President in the chair.

Prof. Parrish called the attention of the Association to the result of the experiment made by passing the settlings of simple syrup through the filtering apparatus exhibited at the previous session.

On motion of Mr. Maisch, Prof. Parrish was requested to furnish to the Executive Committee a drawing and description of this filtering apparatus for publication in the Proceedings.

Mr. A. B. Taylor exhibited the specimens, which should have accompanied his paper, read this morning, on the use of glycerin in Pharmaceutical preparations. They consist of several fluid extracts, which are usually preserved by sugar, some tinctures, &c. He also showed some specimens of fluid extract of Cinchona, with glycerin, made and kept for over a year.

Mr. Maisch, read a paper on the poisonous principle of *Rhus toxicodendron*, in answer to Query 21. It has been stated that the poisonous properties of *Rhus toxicodendron* reside in a volatile alkaloid. Is this true? Is the alkaloid dissipated when the leaves are dried? Can it be isolated in a state fit for medical use, or can the properties of the leaves be preserved in some form as a Pharmaceutical preparation?

In connection with the paper, the writer exhibited a specimen of the aqueous solution of the poisonous acid, named toxicodendric acid, some toxicodendrate of baryta, and the muriate and

sulphate of ammonia, from which Dr. Khittel supposed he had isolated a volatile alkaloid.

Query 1, in regard to the characteristic properties and chemical constituents of the seeds of *Cimicifuga racemosa*, being called up, Mr. Edward C. Jones, of Philadelphia, read a paper in answer thereto.

In pursuance to a resolution passed at the second session, Mr. Albert E. Ebert, of Chicago, read, in lieu of an answer to Query 2d, a paper entitled "Notes on the Sophistication of Commercial Rectified Oil of Amber." The interesting essay was accompanied by specimens of commercial oils, and of the crude and rectified oil of his own preparation.

In answer to a question, Mr. Ebert stated that the rectified oil of amber, prepared by him, cost about \$1.50 per ounce, he having paid 75 cents per pound for amber. An article, sold under the same name, can be bought for 40 cents per pound; and some drug houses, in New York, quote German oil of amber at \$1.50 per pound.

The Chair appointed the following gentlemen a Committee on Specimens: Messrs. Procter, Stearns, and Babcock.

The Business Committee stated that one of the gentlemen appointed had a collection on exhibition, and Mr. Babcock requested, on this ground, to be relieved from serving on this Committee.

The President then announced the Committee to consist of Messrs. Stearns, Stabler, and Markoe.

Mr. Bedford stated that his experiments, to answer Query 9th, were not completed, and desired to have the same subject continued to him another year.

The same gentleman, when Query 10th, in regard to a permanent preparation of pumpkin seed, was called for, said that Mr. Higgins, who had accepted it, had removed to Jacksonville, Florida, and that he had not heard of him since. On motion, the Query was dropped.

QUERY 11th.—What is the most convenient form of apparatus adapted to common use, for regulating the temperature at or below 160°, 140°, and 120°, respectively, as directed in the evaporation of some of the officinal extracts?

Mr. Bedford, of New York, read in answer thereto a paper, and exhibited an apparatus in illustration, stating that with it a temperature of 110° could be maintained, without variations, to any extent.

QUERY 24th, inquiring into the curative power of the fixed oil of pumpkin seed as a remedy for tænia, the best mode of its extraction and its dispensing, had been continued to Mr. C. A. Tufts, of Dover, N. H.

Mr. Tufts stated that he had informed the former Executive Committee of his inability to answer the Query, and had hoped that the matter would be dropped. The reason was that in his locality no case of tænia had occurred, and, consequently, the remedy could not be tried.

Prof. Parrish related some instances where pumpkin seed had been used with success in this disease, in the form of emulsion, and stated that the remedy was perfectly harmless.

Mr. Close stated that he knew of slippery elm having been used successfully; he suggested to refer the question to some Western member, where the disease is more common. As much as ten per cent. of the population of Ohio is said to have tænia.

It was stated that it is also very prevalent in East Boston.

Dr. Squibb.—It is much more common in Ohio and Kentucky than anywhere else. If the Query could be given to some member from that section, who stood in proper relations to the medical profession, good results might be obtained.

Mr. Wiegand.—Mr. Tegetmeier has published his method of preparing the oil by sulphide of carbon, all traces of which can be easily removed.

Prof. Parrish.—Oil is difficult to take, and very unpleasant to the taste, while an emulsion is just the opposite.

QUERY 25th.—An essay on gas-heating apparatus, adapted to the various purposes of the apothecary, &c. The apparatus and paper of Mr. Bedford not having arrived, it was laid over.

QUERY 26th.—What is the best formula for Elixir of Ammonia, which shall be nearly free from valerianic odor, and elegantly aromatized?

Prof. Moore stated that Mr. J. Roberts, by whom the Query was accepted, was engaged in other business, and not likely to

be able to attend to it; if agreeable to the Association, he would lay before them the formula for this preparation, used by the apothecaries of Baltimore. Being invited to do so, he read the formula, and exhibited a specimen of the preparation: the Pharmacutists of Baltimore, being determined not to use Hubbel's Elixir, got this up, and no doubt it is better.

Prof. Parrish.—What Prof. Moore calls Hubbel's is Dr. Goddard's Elixir of Valerianate of Ammonia. It was stated that it was asserted that Hubbel's preparation contains morphia.

Prof. Grahame.—It has occurred to me whether it does not contain Valerianate of Morphia, which possesses the same odor, and would increase the narcotic effect.

Mr. Maisch.—I like such discussions; they lead us directly to the point of the continual introduction of new patent medicines. The patent medicine business is largely on the increase in Europe, although not so much as in this country. European Pharmacutists complain bitterly of its effects on the legitimate Pharmaceutical business. They have adopted a method in Germany, which, so far as scientific pharmacutists and physicians are concerned, exactly meets the case. It consists in analyzing those secret preparations which have acquired some notoriety. I suppose a great many mysteries might be found out by following that practice here.

Prof. Parrish.—Several years ago, I had a student who, for his thesis, was analyzing some common pills. He obtained some boxes of those Indian vegetable pills at the counter of the proprietor, and, on subjecting them to distillation with iron filings, obtained the vegetable matter in the form of globules of mercury. We did not deem it prudent to publish the result.

Mr. George C. Close read a paper, giving the constituents of some preparation sold as a remedy for epilepsy.

On motion, it was accepted, and referred to the Executive Committee for publication.

Dr. Squibb stated that this is Dr. Brown Sequard's prescription, afterwards used by Echeverria, and many others. It has been very effectual in some cases of epilepsy. Bromide of potassium is alleged to be the remedial substance.

Mr. Taylor moved that all papers, which have been offered and

not referred, be now accepted, and referred to the Executive Committee.

The motion was carried.

Dr. Squibb exhibited another specimen of Virginia Opium, brought by Mr. Brewer, of the house of W. H. Schieffelin & Co., and presented in addition to that already furnished.

A volunteer paper was read by Dr. Squibb, "On Economy of Alcohol in Percolation," which was, on motion, accepted, and, on request of the author, referred back to him for completion, to be furnished to the Executive Committee for publication.

Prof. Parrish.—I am sure that the members will feel greatly indebted to Dr. Squibb for his valuable paper. It is interesting in a commercial and economical point of view, and will save a considerable amount in the preparation of those extracts in future.

Prof. Procter.—This paper is starting investigations in a new direction. It not only determines which parts of the percolate are the most valuable in practice, but it gives the relation of one part to the other, and determines, by actual therapeutic experiments, the real value of the result. The paper is one which we should be rejoiced to receive, because it opens a new kind of investigation. I hope that other gentlemen will take it up, with other preparations, and furnish facts arrived at in the same careful spirit.

Dr. Squibb gave some explanation of the tables connected with his paper, and stated that, when the percolate contained only eight grains of extract in the fluidounce, this extract was inert. I wish to say a word about the inference which has been drawn from my experiments, that the processes given would result in the saving of so much alcohol. The object of my paper is to show that the formulas in the Pharmacopœia might possibly be advantageously altered by those empowered to alter them; not that I am going to alter them in my own practice, or that I want anybody else to do so. I wish every one to adhere strictly to the Pharmacopœia, and do not want any one to say, "If the Pharmacopœia Committee do not choose to get together and alter it, we will alter it ourselves. It has been shown to be practicable." My object has been to offer an argument to the

Committee to revise the formulas, or to give us some better ones for saving alcohol. It is the cost of alcohol, in a commercial point of view, which has caused the use of fluid extracts to fall off as it has, on account of the corresponding rise in their price. If, by a change in the Pharmacopœia, we can save this, very good; but, until that change is made, we must submit to the loss.

Prof. Parrish.—I yield to no one in respect for the national Pharmacopœia. I think, however, that Dr. Squibb is too strict in the construction which he places on the Pharmacopœia. Suppose, instead of preparing a pint of fluid extract, as ordered by the Pharmacopœia, I make ten gallons. I maintain that this is an entirely different thing. Adhere to the spirit of the Pharmacopœia; it is not necessary to adhere to the letter. Sometimes, I find that I have exhausted a drug, before using the quantity of alcohol ordered in the Pharmacopœia, and then I stop the process. I do not think that, because somebody found it necessary to use a gallon, for instance, I must find it exactly the same. The Pharmacopœia does not tell us exactly what kind of a percolator to use; for there is a difference in the angle at which the funnel starts. Everybody must use his judgment, and interpret the Pharmacopœia according to common sense.

Mr. Taylor.—Mr. Parrish might be competent to judge, but it would be unsafe to entrust it to everybody.

Dr. Squibb.—The matter comes to this. The Pharmacopœia says four pints of liquor will exhaust a certain amount of a drug; but you insist that less will do it, and each adopts this "higher law" proceeding. It is quite possible that both Mr. Parrish and myself might judge when the proper point was reached; but it is our duty, as examplars, to say that we must not rely upon our own judgment, and teach others so, but go strictly according to the Pharmacopœia.

Dr. Pile.—Suppose we say that we will each take your paper, and have our own opinions, and are very much obliged for it.

Dr. Squibb.—Then I have done more harm than good. If I am to displace better authority in giving this information, then Mr. Taylor would say: "You had better have kept that for the

Committee; it will open the door for others." I maintain that we are all fallible. I am sorry to have diminished respect for what should be the authority for all druggists.

Mr. Close.—I think we want more individual judgment. If Dr. Squibb can produce better preparations at less expense, he should be at liberty to do so.

Prof. Procter.—I am not quite so strict. If a man can make fluid extracts by using one pint of alcohol, where the Pharmacopœia directs two pints, I think he has a right to do so, provided the result is the same as that of the Pharmacopœia. I am convinced that the quantity of menstruum is not to be followed in all cases, and was adopted merely that inexperienced Pharmacutists might have a guide.

Dr. Squibb.—Here comes in another argument. We employ assistants; suppose we trust our improvements to them, who are not skilled, have not the judgment. How can we be certain of the results, if they be authorized to depart from the officinal standard?

Mr. Maisch.—I think that Dr. Squibb has changed his mind within a few years; he substituted—in my opinion, rightly—a formula of his own in the preparation of compound extract of Colocynth, by using resin of scammony in place of the scammony ordered. Certainly, none of us would find fault with such a proceeding. In percolation, I have found it necessary, while working on a large scale, to obtain from a pound of powdered drug, on an average, about a gallon of tincture, or three times as much as the Pharmacopœia orders, to insure exhaustion; wherever it is possible, and particularly with drugs containing alkaloids, I always test for the active principle.

Dr. Squibb.—It had been almost impossible to obtain scammony of such resinous strength as is required by the Pharmacopœia, which says that it should contain from 75 to 80 per cent. of resin; if it contains less, it is not officinal. It is not departing from the Pharmacopœia to get this strength. It was perfectly right to separate from scammony the adulterating substances, and put in pure resin in three-fourths the quantity called for of the diluted drug. The juice yields always 90, sometimes 95 per cent. of resin, and abundant testimony can be

obtained that the resin is the medicinal principle. Scammony which comes to this country is variously adulterated. It does not contain the proportion of resin, and is rarely met with twice alike; and the departure from the Pharmacopœia, that Mr. Maisch truly charges me with, is that, under these circumstances, I chose to separate the resin from the dirt, and, putting the resin in, in official proportion, reject the dirt from the preparation.

Mr. Maisch.—I admit that the present Pharmacopœia requires scammony to contain not less than 75 per cent. of resin. But Dr. Squibb's formula was published five or six years before the present, and when the Pharmacopœia of 1850 was still in full force. This explained the term "Scammonium" to mean "the inspissated juice of *Convolvulus Scammonium*," and, of course, meant the pure juice. If Dr. Squibb chose to interpret this to mean "at least 75 per cent. resin," it was his judgment. Pure scammony contains 90 to 95 per cent. resin. If he had used 90 per cent. of resin in place of the scammony ordered, then he would have substituted enough for pure scammony.

Dr. Squibb.—Dr. Wood says scammony should always contain 80 per cent., or not less than 75 per cent. of resin. That is evidence that it was so understood by those who knew more about the intention of the Pharmacopœia than I did. I adopted it as the better judgment of persons engaged in making the Pharmacopœia. I did not adopt 75 per cent. against 90, or against 65; I had a choice of authorities, and took what I considered the best. There are other authorities who give the same proportion. I, therefore, did not adopt this on my own judgment, but that of more competent persons.

Prof. Parrish.—A clear case of higher law. He is obliged to take some law, and takes the highest. I am not one of those who decry higher law. I think if a man can do a little better than he would be allowed to do, he is justified in doing so.

Mr. Taylor.—I should be sorry to see any deviation from the Pharmacopœia. We should bring forward our improvements, discuss them, bring them to the notice of the Committee, and in this way have the desired corrections made; but, in the meantime, stick to the Pharmacopœia.

Prof. Procter.—Go to work on Dr. Squibb's article, and carry

out the idea. When we have a volume of testimony sufficiently large, let us make the change.

Prof. Parrish.—If we follow the intention of the Pharmacopoeia in fluid extracts, when we come to solid extracts we deteriorate, because the last percolations are not so strong.

Mr. Colcord.—One great object to be attained in the strength of preparations is uniformity. This we cannot get, if we differ. There must be some standard; and as long as you adopt the Pharmacopoeia, you must adhere to it.

On motion, the meeting adjourned until this evening, at 8 o'clock.

Fourth Session. Wednesday Evening, Sept. 6th.

President Lincoln called the meeting to order.

The Executive Committee proposed the following gentlemen for membership:

John J. Fellows, Boston, Mass.

James L. Hunt, Hingham, "

George W. French, Boston, "

Henry Canning, " "

William O. Brigham, Boston, Mass.

William S. N. Allan, Newport, R. I.

Solomon Carter, Boston, Mass.

On motion, the candidates were balloted for. Messrs. Rittenhouse of Philadelphia, and Butterworth of Boston, were appointed tellers, and reported their unanimous election.

The Committee appointed at the second session to audit the Treasurer's books, reported that they had attended to this duty, and found all the accounts correct. The report was, on motion, accepted, but the Committee continued, to report also on the suggestion of the late Treasurer regarding the payment of the travelling expenses of the Treasurer when attending the annual meetings.

Prof. Edward Parrish moved the following amendment to the Constitution, to be acted on at an early session of the next annual meeting:

Resolved, That Section 2, Article III, be amended by substituting the words "Local Secretary" for "Corresponding Secretary;" and that Section 6 be amended to read thus:

"The Local Secretary shall be elected annually at the last session of the annual meeting, and shall be a resident of the city at which the next annual meeting of the Association is to be held. It shall be his duty to

assist the Permanent Secretary in his duties, to co-operate with any local committee in making arrangements for the annual meeting, to correspond with the Chairmen of the several Committees and with other members, in advance of the meeting promotive of its objects, and to have custody of specimens, papers, and apparatus destined for use or exhibition at the meetings. He shall act as Secretary at the first meeting, or until another shall be appointed, in case of the absence of the Permanent Secretary."

Also, That in Section 4, defining the duties of the Permanent Secretary, after the words "shall be charged with," the words "the necessary foreign and scientific correspondence" shall be added; so that it shall read, "shall be charged with the necessary foreign and scientific correspondence, and with editing, publishing, and distributing the Proceedings of the Association, under the direction of the Executive Committee."

Also, That wherever the term "Corresponding Secretary" is used in the Constitution, the term "Local Secretary" shall be substituted.

The above resolutions, accordingly, lie over for one year.

On motion of the Business Committee, it was resolved, that Mr. Ferris Bringham, of Wilmington, Del., be requested to exhibit his specimens and offer his remarks.

Mr. Bringham exhibited a paste-cup, with a leather cover, through which the handle of the paste-brush is permanently fixed; the object is to prevent the paste from drying, to keep the dust out of the paste, and to avoid the handle getting covered with it, so as to soil the fingers. He exhibited a bottle suitable for keeping and dispensing oils. The bottle is wrapped with some absorbent paper, which holds it firmly in a tin can, reaching to just above the shoulder. Thus light is effectually excluded, and dripping, if it does take place, does no injury, the oil being absorbed by the paper.

A sample of simple cerate was shown by the same gentleman, in which white was replaced with yellow wax, which prevents rancidity; he has used it also in glycerin cream, and in suppositories. For the latter he uses cacao butter, as a base, with about one-seventh its weight of yellow wax, which does not, like spermaceti, dispose them to crack in cold weather. When they are to be mixed with extracts, the latter are triturated with water, the cacao butter being heated to 100° F., to insure thorough mixing. The block tin moulds are put in a tray, heated to about the melting point of cacao butter, then taken away and filled before getting cool. The tray is then put in the refrigerator, or in the cold air, and, in fifteen or twenty minutes, the suppositories are ready to come out, by slightly tapping the mould.

Mr. Ebert said that he preferred using the extracts in the form of powder, prepared in the manner directed by the Prussian and other German Pharmacopoeias, by mixing the extract with a sufficient quantity of sugar or sugar of milk to make the weight, after drying, one and a half or twice that of the original extract. For suppositories he uses Parrish's method with ice in the

water surrounding the moulds ; experienced no difficulty with the fat going down to the point, and they are done in 5 or 10 minutes.

Mr. Bringhamurst thinks powdered extracts apt to produce precipitation ; he pours the fat pretty thick.

Mr. Ebert prevents precipitation by stirring with the right hand and pouring with the left.

So does Mr. Bringhamurst, who also prepares his powdered extracts the way mentioned, but desires that there should be some system generally adopted for such preparations.

Mr. Markoe has had no trouble with Parrish's and Taylor's modes for preparing suppositories.

Mr. Ebert said that liquid extracts used in suppositories prevent intimate mixing by stirring, and render them streaky.

Mr. Bringhamurst.—Some physicians prescribe borax ; such suppositories cool quickly and are hard. He dispenses them in a box with layers of cotton between.

Mr. Taylor uses, for melting, a small tin vessel, shaped like a coffee pot, and keeps it in rotation just before pouring ; he uses yellow wax for hardening, and sugar of milk for powdering extracts, to his entire satisfaction ; keeps the moulds cold.

Mr. Bedford stated that, in New York, suppositories are generally made by mixing the materials in a mortar and rolling them out.

Mr. Stearns.—In Detroit they are not often prescribed ; he moulds them in a tube, with a diameter of the size of the syringe, in one long stick, and cuts this into the required number of pieces.

Prof. Parrish prefers spermaceti for congealing suppositories ; he dispenses them in paper boxes lined with tin foil.

Mr. Stearns works suppositories as soft as possible, and gives them a coat of wax by dipping.

Mr. Bringhamurst said this does not work well on account of the great contraction of wax.

Mr. Close adds a drop of syrup to about ten grains of cocoa-butter, which makes them tough.

Prof. Procter stated that a member of the British Pharmaceutical Convention ventilated the question about the use of yellow wax in ointments, and takes about the same ground as Mr. Bringhamurst.

The Auditing Committee presented the following :

The Committee, to audit the Treasurer's accounts, would recommend that hereafter the expenses for railway or other fare, incurred by the Treasurer in going to and from the meetings, be defrayed by the Association.

(Signed)

F. STEARNS, *Chairman*,

H. HAVILAND,

F. FARIS MOORE.

This report was, on motion, accepted, and the Committee discharged.

The question before the Association now being on the adop-

tion of the recommendation of the Committee, Dr. Squibb offered the amendment, to strike out the words "railway and other fare," and insert in place thereof the words "travelling expenses," as in the case of the Permanent Secretary. The amendment was decided in the negative, and the recommendation of the Auditing Committee was then adopted.

The Committee to examine specimens presented a report, which was read, and, on motion, accepted, and referred to the Executive Committee for publication. (See Sixth Session.)

Prof. Parrish called the attention of the meeting to a specimen of "*Carthamus*" on exhibition, which is labelled "Saffron."

Mr. Markoe.—We sell safflower for saffron in Boston almost altogether. Saffron is almost unknown here. When people ask for saffron they mean safflower.

Prof. Parrish.—We sell saffron; we should think it an absolute fraud to give safflower.

Prof. Procter.—In Philadelphia two kinds of saffron are found, the genuine and a so-called saffron with a very little genuine in it.

The question being asked what price the gentlemen from Philadelphia paid for their saffron, several stated that they paid from 24 to 28 dollars per lb.

Mr. Maisch.—Saffron is, or used to be, raised to a certain extent by German settlers in the interior of Pennsylvania, which found its way to Philadelphia; I know three or four Apothecaries who used it, among them the late F. L. John; this saffron was generally sold by putting it in one dish of the scales and silver quarters in the other, thus making it cost about \$20 in silver.

Mr. Heinitch uses saffron raised in Pennsylvania, and has bought it at \$8 a pound.

Prof. Procter.—Mr. Dix, of New York, brought different specimens of commercial saffron to the meeting in New York, (see page 29, Proceedings, 1860) and gave his experience as a drug merchant; he said that saffron could not be raised here, the labor being too high. He showed the ways of adulteration, and made a very interesting report.

Mr. Colcord.—In Boston true saffron is not saleable, the price being over \$20 per lb. in New York. The saffron sold is not what we understand by dyer's safflower; it is called American saffron, and is neither the safflower of commerce, nor the pistils of *Crocus sativus*.

Mr. Taylor bought, a short time ago, two specimens, paying a dollar and a half per ounce for one, and fifty cents for the other. The first was a very fine article of saffron; the other was safflower resembling in color dry saffron.

Prof. Parrish has seen a lot which had been exhausted by alcohol; it was of a dark brownish instead of the proper color. We ought not to confound two such different things.

Mr. Markoe remarked that *Aqua Cinnamomi* made by the official process, with true oil of cinnamon, soon becomes turbid.

Prof. Procter explained the cause to be the oxidation of the oil, and the formation of cinnamic acid, which crystallizes from the water. Oil of Chinese cinnamon yields a water by the official process, remaining clear for a much longer time.

Mr. Mason McCollin exhibited Chapman's Spine-bag. It is largely used in England for sea-sickness, convulsions, &c. It consists of an India rubber bag divided into three compartments, opening at the top, one being one-third, the next one-half, the third the whole length of the bag. The ice is broken into small pieces, and then put into the compartments. By this arrangement the ice is extended over the whole surface.

Mr. Stearns said that he had been shown the same instrument by Mr. Tieman, of New York, who is going to manufacture them.

Mr. Ebert read a paper, written by Mr. James W. Mill, of Chicago, entitled "Fidelity to the Pharmacopoeia." On motion, it was accepted, and referred to the Executive Committee for publication.

Mr. Chas. A. Tufts, on behalf of the Massachusetts College of Pharmacy, presented to the American Pharmaceutical Association a likeness of our former associate Charles T. Carney.

On motion, the meeting adjourned at 10.35, P. M., to meet to-morrow morning at 10 o'clock.

Thursday, Sept. 7th—Fifth session.

Pursuant to resolution the Association met at 10 o'clock, President Lincoln in the chair.

The Business Committee moved that the reading of the Minutes of the previous meetings be dispensed with, which motion was carried.

The amendments to the Constitution, as proposed by the late Executive Committee, were called up.

The Chairman of the Business Committee said that the first modification, recommended by the Executive Committee, is to add in Article II, Section 2, after the words "may apply" the words "in writing," so as to make the sentence read, "Any person, eligible to membership, may apply in writing to any

member of the Executive Committee, who shall report his application to said Committee." He moved that the amendment be adopted.

The amendment was adopted unanimously.

The Chairman of the Business Committee stated that the next modification is to Section 8, Article II. The Executive Committee propose to strike out the words "sign the Constitution, and;" the sentence in question would then read: "No person shall become a member of the Association until he shall have paid his annual contribution for the current year."

Mr. Maisch.—The object of the amendment is simply this: if an application is made in writing, in the form attached to our Constitution, the applicant has virtually signed the Constitution, so that it is unnecessary to require him again to sign it.

Mr. Shinn.—This form of application may be changed by the Association; it would be well to have it in the Constitution.

Mr. Maisch.—As the Constitution now stands a candidate must approve of the Constitution when applying for membership, and if elected must sign the Constitution, this particular book, which would have to be sent then all over the country.

Mr. Haviland.—I did not notice that, "until he has paid his annual contribution," is in the Constitution; a man resigns then every year, unless he pays.

Dr. Squibb.—This is for new members; it refers to those who were not before members by the Constitution.

Mr. Maisch.—The Executive Committee had in view to facilitate business and save trouble. We have now over two hundred members who are really not members constitutionally. I have reported about 150 names whose signatures are not in the possession of the Committee, and in the distribution of the Proceedings I did not consider them members. These names appear on the roll; the names of those elected at the last meeting I was compelled to put on the roll; many of them did not sign. If hereafter, the written application is considered a virtual signing of the Constitution, no one can be recommended for membership without previously signing it, and no one can be elected and then say, "I was elected against my will," or "I never knew there was such an organization."

Mr. A. B. Taylor.—This is not specific enough; members might not make application in this form.

Mr. Maisch.—The Executive Committee must require it.

Mr. Haviland.—While Treasurer I never opened an account with a new member unless he had signed the Constitution.

Mr. Maisch.—Names have appeared on the roll for eight and ten years and their signatures cannot be found.

Mr. Procter.—Our course was to accept the names and make them members.

After the meeting was over, the Chairman of the Executive Committee sent a blank Constitution with the request that it should be considered, and if approved, signed and returned. If not approved his name was not entered on the roll.

Mr. Maisch.—Suppose he never answered the letter. With the exception of one or two names, all who were elected members appeared on the roll.

Mr. Haviland.—The whole matter can be attended to by the Chairman of the Executive Committee and the Recording Secretary; better let the Constitution remain as it is.

Mr. Maisch.—If we go on as heretofore, we may get fifty or sixty members every year who never perfect their membership. We shall compel them now to apply in writing and sign the Constitution previously. When a candidate comes before the Association, he becomes a member by election and afterwards will have to pay his annual dues.

Dr. Squibb.—If we require in Section 2 an application in writing and to sign the Constitution in Section 3, the applicant might merely write, "I desire to become a member of the Association without ever saying a word about signing the Constitution."

Mr. Parrish.—If you examine the Constitution, you will find that this matter belongs to the Executive Committee; they have control of the membership and the roll.

Mr. Maisch.—They have charge of the revision of the roll.

Mr. Parrish.—That means striking off all members who have not signed the Constitution, or who do not pay their fees; this is the business of the Executive Committee. I hope the Executive Committee will be empowered to make all necessary rules for revising the roll; they are simply guided by the Constitution; any person elected, signing the Constitution and paying his fee, is a member; otherwise he is not a member and should be stricken from the roll.

Mr. Maisch.—Some of those who have not signed, owe their dues for seven or eight years; they have received the "Proceedings," their names are on the roll, and when applied to for their dues, they said, "I am not a member."

Mr. Parrish.—The Association has chosen to consider them members. All we have to do is to strike their names from the roll. If a man claims to have signed, it must be so considered; if he denies, strike him out. A good portion of the printed Constitutions have been lost.

Dr. Squibb.—The requisites for membership are, first, application, then election; no man can become a member without the first being first and the second, second. He must then complete his membership by signing the Constitution. He is afterwards required and accepts this requirement when he makes application to pay his annual fee. The question is, to get these things in their proper order in the Constitution. We have made him apply in writing; if his application must be in a given form containing the Constitution, we shall be sure that he knows the object of the Association, its rules and regulations; he has applied in the full light of this knowledge. It covers the whole ground to make him apply according to a printed form.

Mr. Maisch.—I am inclined to drop this point. I like to have the Constitu-

tion read so that it can be construed in one way only. So far as I am concerned, I shall construe it in the manner indicated by Prof. Parrish.

Mr. Parrish.—I had a hand in making the Constitution. The subject of membership, except balloting, was left on purpose with the Executive Committee, and I think this Committee have power under the Constitution to revise the roll by striking off the names of persons who have not paid their fees or have not perfected their membership.

The question was then put and the amendment was lost, less than three fourths of the members present voting in the affirmative.

Article II. Section 4. The first amendment to this section proposed to add after the words "shall pay" the words "in the month of January." An amendment was made to substitute for the words "in the month of January" the words "in advance."

After some discussion the amendment to the amendment was adopted by the original mover, and the question being taken on this resolution it was adopted, all members present voting in the affirmative.

The second amendment to Section 4, Article II., proposed the substitution of the word "two" for the word "three" in the following sentence, "and is liable to lose his right of membership by neglecting to pay said contribution for three (amendment two) consecutive years."

The amendment was lost, not three fourths of the members present voting in the affirmative.

The Business Committee said: The third proposition is in the same section, namely, to leave out the words "on the payment of three dollars," so that the paragraph in question would read, "members shall be entitled to receive a certificate of membership signed," &c.

This proposition being made conjointly with another one, namely to charge an admission fee of five dollars, for which the certificate of membership is to be issued, the Business Committee suggested to bring the whole subject before the Association, by deciding first upon the question: Shall an initiation fee be charged?

Mr. Parrish said that two dollars was enough to pay before a man knows whether there is any good in it or not. To some members, two dollars is quite an item.

Dr. Squibb.—We want more money. If members prefer some other way, I am willing. It is said that the initiation fee will keep out members. We can very well spare such ones.

Mr. Maisch said that by paying two dollars, a member may receive four Proceedings before his name can be dropped.

Messrs. Procter, Colcord and Bedford thought that the Treasurer could do much more to raise money.

The question being called for, the question : " Shall an initiation fee be charged ? " was decided in the negative. Consequently the third amendment to Section 4, Article II., is lost ; also the proposed alteration of the Constitution requiring applicants to accompany their application by an admission fee of five dollars, to be returned if not elected, and for which, in case of election, the certificate was to be furnished.

Section 4, Article II., as amended by these votes, reads as follows : " Every member shall pay in advance into the hands of the Treasurer the sum of two dollars as his yearly contribution," and so on to the end of the section.

The proposition of the late Executive Committee for an addition to Section 2, Article II., requiring applicants for membership to be recommended by two members in good standing, was amended as follows : to add in Article II., Section 2, after the words " may apply in writing," the words " with the endorsement of two members in good standing."

The amendment was accepted, and the proposition as amended was then adopted unanimously. Section 2, Article II., now reads : " The mode of admission to membership shall be as follows : Any person eligible to membership may apply in writing with the endorsement of two members in good standing, to any member of the Executive Committee, who shall report his application to the said Committee." And so on to the end of the section.

The following proposition of the late Executive Committee was now brought before the meeting : Members who have been suspended for nonpayment of dues, on re-entering the Association, are required to pay the whole balance of their yearly contributions, to entitle them to life membership.

Mr. Colcord.—That is not too hard for a man who has been suspended.

Mr. Parrish thought this would cut off members we would not want to part with.

Mr. Taylor.—If you have it understood that this applies only to members who have been dismissed, it will be all right.

Mr. Parrish.—I have known instances where individuals, who were among the best men we had, could not afford to pay their dues. Leave the matter to the Executive Committee to investigate.

Mr. Maisch.—It is understood that the Executive Committee possess the right to suspend. I am willing to leave the matter as it is.

Mr. Colcord.—I think it is proper to instruct the Executive Committee to withhold the Proceedings from those in arrears for two years.

The proposition was lost, no vote being cast in the affirmative.

The late Executive Committee proposed the following as an additional section to Article II. of the Constitution:—

An extra assessment may be levied at any annual meeting on all members, including life members, which assessment shall be paid by the month of January following.

Dr. Squibb.—Could not this be done without amending the Constitution?

Mr. Procter.—I was going to say, in regard to life members, that I would be willing to advocate the abolition of the clause by which they are not obliged to pay.

The proposition, as an amendment to the Constitution, did not receive the requisite vote of three-fourths of the members present, and was, therefore, lost.

Another new section to Article II. was proposed by the same Committee, as follows:—

Members changing their residences are required to inform the Treasurer and Chairman of the Executive Committee of the same.

The Chairman of the Business Committee stated that copies of the Proceedings were sent to members who had changed their residences, without the Executive Committee being aware of it; he thought, however, that the matter might be left with the Executive Committee.

Mr. Colcord said that putting it in the Constitution would not make members attend to this duty any more than now.

The proposition was lost.

The same Committee proposed the following new section to Article II. of the Constitution:

Members, desiring to withdraw from the Association, are required to notify the Treasurer of their intention, who shall be authorized to accept the resignation, and report at the next annual meeting; provided such members have paid their dues, and otherwise complied with the requirements of the Constitution.

After some discussion, in which it was stated that a similar resolution had been passed at the meeting in New York in 1860, the subject was passed over without having been acted upon.

The Chairman of the Business Committee now read the other recommendations of the late Executive Committee, for the in-

formation of the members, they requiring no special action on the part of the Association, namely :

"That members be requested to write their reports and essays on foolscap paper, to enable the Recording Secretary to preserve them properly ;

"That, in order to avoid loss of the Proceedings by mail, members residing in the interior be requested to inform the Secretary if they desire to have them sent through a wholesale drug house in one of the large cities.

"And that, to facilitate the sale of the Proceedings, a certain number of copies may be deposited with the Colleges of Pharmacy, if they will agree to furnish, by the first day of August each year, a complete statement of sales and stock on hand."

Mr. Fred. Stearns read a volunteer paper entitled, "On the Production of Peppermint in Michigan."

Also, another paper entitled, "On Rhubarb Wine."

Both papers were, on motion accepted, and referred to the Executive Committee for publication.

Prof. Alex. H. Everett exhibited specimens of metallic magnesium, in the form of ingot, wire, and ribbon, and gave some information of its uses in the arts, particularly for signal lights, for photographic and pyrotechnic purposes ; also of the contemplated manufacture of this metal in this country. The specimens exhibited are of English origin ; wire and ribbon were manufactured in New York.

The place and time of the next annual meeting being called up for discussion, Mr. E. L. Massot repeated his invitation, extended at the third session, to hold the next annual meeting at St. Louis.

Mr. Fred. Stearns spoke in favor of Detroit, and promised to the Association a hearty welcome on the part of the druggists and apothecaries of his city.

Prof. Moore offered a standing invitation from Baltimore to meet at that city as often as convenient.

It was moved by J. M. Maisch that, when we adjourn, we adjourn to meet next year at St. Louis.

Prof. Parrish offered the amendment to substitute "Detroit" for "St. Louis."

The amendment was adopted, and the motion, as amended, was then carried.

Dr. Squibb moved to meet next year on the third Wednesday of August, at 3 o'clock, P. M.

An amendment to substitute the "fourth Wednesday" for the "third Wednesday" was offered by Prof. Parrish, and adopted, and the motion, as amended, was carried.

The question before the meeting was now on the adoption of the following resolution as a whole:—

Resolved, That, when we adjourn, we adjourn to meet at Detroit, Michigan, on the fourth Wednesday of August, next year, at 3 o'clock, P. M.

The resolution was adopted.

Mr. Thos. S. Wiegand read a paper on the obligation of Pharmacutists in respect to the instruction of those in their employ.

On motion, the essay was accepted, and referred for publication.

The Business Committee informed the Association that Dr. Bartlett was present, having in his possession a paper, accompanied by drawings, on a new form of a vacuum apparatus, by our fellow member, N. Gray Bartlett, of Chicago. Dr. Bartlett, on invitation, read the paper and explained the drawings, all of which were, on motion, referred to the Executive Committee for publication.

Dr. Squibb.—I think there is some fallacy in this apparatus—some want of practicability in application—cannot say exactly where it is; but am under the impression that the difficulties of condensing in a vacuum will be the main obstacle to its meeting the expectations of the inventor. Water boils in a vacuum at about 67° , and alcohol at 27° , and at the best working vacuum obtained in practice, the temperature at which water can be rapidly driven off is not often below 140° . Even at this latter temperature, it has not been found practicable to condense the vapor by means of a worm, or in any other way than by injecting water finely divided into the vapor. This plan of condensation by injection is entirely inapplicable to alcoholic vapor, for obvious reasons. In sugar refining, where vacuum apparatus is most extensively used, and to the best attainable advantage, this Toricellian water vacuum is used, but always as an adjunct, and with a powerful air-pump behind it, and with injection by water jets as the main dependence for condensation. In the practical application of this apparatus to the evaporation of any mixture of alcohol and water, even if the worm was surrounded with water at the freezing point, I should expect but a small proportion of the watery vapor to be condensed by the worm, and that a large portion of the alcoholic vapor,

with the remainder of the watery vapor, would pass on into the vacuum reservoir, to be there condensed by, and, of course, mixed with, the current of water supplied to that vessel. At the same time that I believe this apparatus to be neither very new nor very practicable, this statement is made rather from general impressions than from accurate knowledge of the subject. It is very creditable to the inventor, and I am sorry he is not present to give us a more extended acquaintance with its principles and details, and possibly to answer all these theoretical objections of mine by telling us that it had been put into actual use with success.

Mr. Maisch said that he thought Dr. Squibb's misgivings were well founded, but still he supposed that condensation could be effected by lengthening the condensing worm, or otherwise increasing the condensing surface.*

The Executive Committee brought forward the names of the following gentlemen for membership in the Association, they being endorsed as required by the Constitution :—

Alonzo Robbins, Philadelphia, Pa.,

G. A. Newman, Brooklyn, N. Y.

Messrs. Ashel Boyden, of Boston, and E. L. Massot, of St. Louis, being appointed as tellers, reported their unanimous election.

On motion of Prof. Parrish, Mr. H. W. Lincoln was requested to furnish to the Executive Committee, for publication in the Proceedings, a cut and description of the herb-cutter, which has been on exhibition during the present meeting.

Dr. W. H. Pile stated that his papers and apparatus had not arrived yet, and proceeded to give some figures contained in one of his absent essays,† regarding the meaning by the Pharmacopœia of the term "per cent." in the case of whiskey and brandy.

Dr. Squibb said the term per cent. invariably means by weight, and if volumetric per cent. is intended the word must not be omitted. A confusion arises from the fact that manufacturers give the per centage by volume, because this figure is higher than the figure for the per centage of the same liquor by weight, and it makes the thing appear stronger than it is. But the Pharmacopœia understands per centage to mean by weight only. Where it is admissible it would be well to indicate both per centage by weight and by measure.

Dr. Pile.—This has been desired by many.

Dr. Squibb.—The difficulty arises from an oversight by Dr. Wood, in not discriminating.

* Mr. Bartlett has informed the Secretary, since the meeting took place, that he had used the apparatus on a small scale, condensing with perfect success both water and alcohol.

† This paper was read at the sixth session, and is published among the volunteer papers.

The Chairman of the Committee on Scientific queries read the following report, which was, on motion, accepted, and referred to the Executive Committee for publication.

To The American Pharmaceutical Association.

The Committee on Scientific Queries, appointed at the last Annual Meeting, report the following as the result of their labors:

QUERY 1st.—What is the best form of Apparatus by which pressure steam, generated by gas or petroleum heat, may be applied for evaporation, distillation, etc., on a moderate scale, at the working counter of the shop, so that the condensed steam shall return to the boiler, combining efficiency and compactness with economy?

Accepted by William Procter, Jr., of Philadelphia.

QUERY 2d.—Pharmaceutical Business—its management.

Accepted by Frederick Stearns, of Detroit.

QUERY 3d.—What are the comparative advantages, as to economy and efficiency, of Percolation and the Press?

Accepted by Dr. R. H. Stabler, of Alexandria.

QUERY 4th.—What form of mill is best adapted to the use of the Pharmacist?

Accepted by Dr. R. H. Stabler, of Alexandria.

QUERY 5th.—What material is best adapted for Press Cloths, combining strength, cheapness, and slight absorbing power for liquids?

Accepted by Dr. R. H. Stabler, of Alexandria.

QUERY 6th.—It has been asserted that Senna contains chrysophanic Acid, and that its activity is probably due to that principle. Can chrysophanic Acid be isolated from either Alexandria or India Senna, and, if so, can it be proven that this Acid contributes in greater or less degree to the purgative power of Senna and Rhubarb?

Accepted by F. W. Sennewald, of St. Louis.

QUERY 7th.—In what respects do the sensible properties of the leaves of Hyoscyamus and Belladonna, grown and cured in the United States, differ from the leaves of these plants imported from England and Germany, as presented in commerce; do the latter contain more of the respective alkaloids than the former; and, if so, is this difference due to soil, climate, and culture?

Accepted by Lewis Dohme, of Baltimore.

QUERY 8th.—What are the impurities of cheap Commercial Glycerin; can they be removed economically without distillation, so as to render the Glycerin colorless, odorless, and cheap; and, if not, what is the best practical process and apparatus for the distillation of Glycerin with superheated steam?

Accepted by James F. Babcock, of Boston.

QUERY 9th.—What are the impurities in Commercial Valerianate of Ammonia; can it be purified, without decomposition, from Butyrate and other salts, when present; if not, what is the best process for obtaining

pure Valerianic Acid from the Amylic Alcohol of Commerce, and what are the most eligible forms for administering the salt in question?

Accepted by N. Gray Bartlett, of Chicago.

QUERY 10th.—What change can be made in the composition of Em^{plastrum Picis cum Cantharide} that will render its consistence firmer in warm weather?

Accepted by George C. Close, of Brooklyn.

QUERY 11th.—What is the best course to be pursued by the apothecary in economizing the alcohol used in preparing fluid extracts, etc.?

Accepted by N. Gray Bartlett, of Chicago.

QUERY 12th.—An essay on *Podophyllum peltatum*, chemical and therapeutical, which shall settle the questions now pending, relative to its active principle or principles.

For general acceptance.

QUERY 13th.—Is Commercial Extract of Quassia made by the U. S. P. process; if not, by what process; and can the former process be advantageously revised?

Accepted by Edward C. Jones, of Philadelphia.

QUERY 14th.—How far may Alcohol and Ether be substituted by other liquids, in the preparation of the officinal oleo-resins, without detriment to these products?

Accepted by Henry N. Rittenhouse, of Philadelphia.

QUERY 15th.—Cotton root is said to be an efficient Emenagogue, and cotton seed to have proved effectual in treating intermittent fever; do these portions of the *Gossypium* possess active principles?

Accepted by E. W. Sackrider, of Cleveland.

QUERY 16th.—In the destructive distillation of Tobacco, by the process of the U. S. Pharmacopœia, to get the Empyreumatic Oil, Malate of Nicotina has to be decomposed. Can a better preparation be obtained by liberating the Nicotina with a sufficient quantity of potassa before distillation, reducing the heat to the minimum degree necessary to extract the alkaloid?

For general acceptance.

QUERY 17th.—Is the Volatile Oil of *Chenopodium anthelminticum* the only active principle it contains having vermifuge properties?

Accepted by Thos. S. Wiegand.

QUERY 18th.—An essay on *Sassafras Officinale*, embracing the whole plant in its relations to Chemistry and Pharmacy.

Accepted by William Procter, Jr., of Philadelphia.

QUERY 19th.—What is the best formula for a granular effervescent Citrate of Magnesia, which shall be permanent, readily soluble in water and suitable for general use?

Accepted by James W. Mill, of Chicago.

QUERY 20th.—What is the best means by which Cinchona may be deprived of Cinchotannic Acid, so that its alkaloids, in the form of kinates, may be obtained in a permanent liquid form?

Accepted by William Procter, Jr., of Philadelphia.

QUERY 21st.—*Oleum Brigerontis Canadensis* is considered to be the active principle of the Canada fleabane; is this correct, or is there another fixed principle possessing medical properties?

For general acceptance.

QUERY 22d.—What improvements can be suggested in the preparation of the Official Syrup of *Lactucarium*?

Accepted by P. W. Bedford, of New York.

QUERY 23d.—Why should not *Lactucarium* be produced in the United States in sufficient abundance and cheapness to supply all our wants; and what are the best practical suggestions for its culture and preparation?

Accepted by Alfred Mellor, of Philadelphia.

QUERY 24th.—To what principle does *Scutellaria lateriflora* owe its medical properties?

Accepted by G. F. H. Markoe.

QUERY 25th.—What is the best process of benzinizing lard and simple ointments; can benzinized lard be employed for mercurial ointment, so as to prevent its strong tendency to become rancid, without hurting its medical qualities, and in what other ointments may this form of lard be advantageously used?

Accepted by Thomas Doliber, of Boston.

QUERY 26th.—An essay on Bees-wax—its Commercial and Chemical history—the best method of bleaching it without injury to its physical and medical properties, and what substitutes have been found that may be used in emergencies.

Accepted by James F. Babcock, of Boston.

QUERY 27th.—Is *Hyoscyamia* a permanent principle like *Atropia*; which is the best part of the plant for its extraction; and what impediments exist to its manufacture as a pharmaceutical preparation for medicinal use?

Referred to Prof. A. Wadgymer, Ph. D., of St. Louis.

QUERY 28th.—What is the most eligible form of apparatus yet discovered, or which can be suggested, for preparing pills of uniform size, at will, and can it be adapted to the wants of the apothecary on a moderate scale?

Accepted by Ferris Bringham, of Wilmington, Del.

QUERY 29th.—What are the advantages and disadvantages of coating pills with sugar or other substances; and what is the best method of coating pills extemporaneously for dispensing?

Accepted by S. Mason McCollin, of Philadelphia.

QUERY 30th.—What is the most perfect and reliable process of manipulation to produce *Liquor Ammoniae Acetatis*, pure, and in a neutral or slightly acid condition?

Accepted by Dr. W. H. Pile, of Philadelphia.

QUERY 31st.—It having been satisfactorily ascertained that the actinic (or chemical) rays of light are intercepted by orange-colored glass, so as not to injure drugs and medicines, it is queried in what way this means

can be most eligibly and satisfactorily applied, in the shop or store room, based on the results of trials in various ways.

For general acceptance.

QUERY 32d.—What are the best approximate methods of testing the extracts, fluid extracts, and tinctures, so as to increase the accuracy and certainty of the means of describing and judging of these?

Accepted by Edward Parrish, of Philadelphia.

To this list the following queries were added, which, in accordance with the resolutions adopted at the second and third sessions, were continued to the members by whom they were previously accepted, the investigations being too incomplete yet to report upon.

QUERY 33.—*Gillenia trifoliata* and *stipulacea* are found extensively diffused throughout the United States. Their roots are known to resemble *Ipecacuanha* in medical properties. Could they be made to substitute that costly drug, and would the fluid extract, wine and syrup of *Gillenia* be available for use as substitutes for the corresponding preparations of *Ipecacuanha*? *Continued to Albert E. Ebert, of Chicago.*

QUERY 34.—Can Citric Acid be profitably produced in this country from Currants, Gooseberries or Tomatoes?

Continued to Henry N. Rittenhouse, of Philadelphia.

QUERY 35.—Is the cultivated Valerian produced in New England of equal quality with that imported from England and Germany, and are there any characteristic differences by which they may be distinguished?

Continued to Thos. Doliber, of Boston.

QUERY 36.—Fermentation and cryptogamic vegetation viewed as destructive agents in connection with drugs and pharmaceutical preparations. What are the best means of avoiding the former and arresting the growth of the latter without injury to the drugs and preparations?

Continued to George J. Scattergood, of Philadelphia.

QUERY 37.—*Stramonium* is abundant in the United States, and its alkaloid *Daturia* is alleged to be identical with *Atropia* in *Belladonna*. If this be true, in what relative proportions do these plants contain the principle, and why may not *Stramonium* be used as a source of *Atropia*?

Continued to Prof. F. F. Mayer, of New York.

QUERY 38.—What is the best strength of alcohol for the extraction of the several gum resins, with a view to the production of eligible liquid preparations of the drugs?

Continued to P. W. Bedford, of New York.

Prof. Moore presented the report of the Committee, to whom the report of the Committee on arrearages had been referred,

together with the papers on the same subject, accompanying the report of the Executive Committee.

The Committee appointed to examine the list of members in arrears, would suggest that all members who have been heard from and who have failed to pay their dues for over three years, and who have no certificate, be dropped from the roll. All persons who have the certificate, and have failed to pay, or refuse to pay their dues for over three years, be stricken from the roll, and their names published. Also, that the Treasurer be requested to correspond with all who are in arrears, and all who do not respond within three months, be placed on one or other of the above lists.

They would recommend that the Committee be continued, in order that further time be given them to perfect the list of membership.

S. M. COLCORD,
J. F. MOORE,
H. HAVILAND,
CHAS. A. TUFTS.

Dr. Squibb moved that the report be accepted and adopted, and that the Committee be allowed further time to complete their report.

Mr. Maisch said that the former Executive Committee had corresponded or had attempted to correspond with every one who was four years and more in arrears, by writing to each one two or three times; he could not see why we should waste any more time and money on such members. The only members with whom no correspondence was had, are those living in localities which last winter were not occupied by the loyal forces.

Mr. Stearns said that the Committee had been disposed to strike off all who had been long in arrears; but several have come forward at this meeting and paid their dues, some for six or eight years. Others may come forward and pay. A list has been prepared, to be acted on at once, of those who have been heard from.

The report of the Committee was disposed of, in accordance with the motion of the Chairman of the Business Committee.

Mr. Shinn offered the following resolution, which was seconded and adopted:

Resolved, That the heartfelt thanks of the Association be tendered to the Massachusetts College of Pharmacy, and the members of the Profession in Boston, for the hospitable and courteous attentions bestowed upon their guests, rendering their visit eminently agreeable, and affording food for pleasant recollections in the future.

On motion, it was resolved that Mr. Bedford be requested to finish his paper on Gas-heating apparatus and hand it to the Executive Committee for publication.

The Association, on motion, adjourned, till to-morrow morning at 8 o'clock.

Friday morning, Sept. 8th.—Sixth session.

Pursuant to adjournment the Association met, President Lincoln in the chair.

During the temporary absence of the Secretary, the Chairman of the Executive Committee was appointed Secretary, pro temp.

Mr. Bedford exhibited, and explained, various kinds of gas heating apparatus; he stated that his paper, in answer to query 25, was not finished, and desired the privilege of finishing it for publication.

On motion of the Chairman of the Business Committee, it was resolved, that the paper of Mr. Bedford be received as if presented, and that the writer be allowed time to complete it and hand it in for publication.

Dr. Squibb gave a short description of an apparatus he used, with fire-clay inside.

Prof. Procter.—Bullock and Orenshaw lay great stress upon the value of this fireclay cylinder, which absorbs heat and afterwards gives it out.

Dr. Pile.—The heat is too great. The cylinder is heated about the same as the fire brick. Uses a similar furnace, which has the edge reach up some distance above the flame. The heat is perfectly diffused and safe, and large quantities can be evaporated; never lost a porcelain dish by it.

Mr. Shinn objects to the lining, because the heat cannot be stopped without removing the capsule.

Dr. Squibb.—Parker's cluster burner has several tubes collected together, but spread a little; it gives heat without diffusion, heating from three to eight points very intensely; capsules are easily cracked by it.

The Business Committee stated that Dr. Pile's paper and specimens had arrived, and proposed that the latter be examined by the Committee on Specimens to be incorporated into their report.

The proposition was adopted.

The Business Committee stated that there were a few recommendations of the Executive Committee, of 1863-64, lying over from last year, namely: to increase the annual contribution to three dollars, to charge for the Proceedings \$1 50 per copy, to charge life members with the Proceedings at the same price at which they are sold, and in regard to prizes, prize queries and medals.*

*These recommendations, except the one to increase the price of the Proceedings, were rejected in 1864. See Proceedings for 1864, pages 41 and 42.

On the suggestion of Mr. A. B. Taylor to place an extra assessment of one dollar for the next year upon each member, the Executive Committee presented the following:

Whereas, The expenses of the Association have been greatly increased within the past few years, through various well known circumstances, therefore,

Resolved, That an additional special assessment of one dollar, for the year 1866, be required from each member, and that the obligations to meet this assessment by members be the same as those which apply to the usual annual dues.

Considerable discussion took place, Dr. Squibb, Messrs. Taylor, Tufts, Rittenhouse, Shinn, Procter, Markoe, Butterworth and Moore speaking in favor; Prof. Parrish in opposition, the latter taking the ground that there were many young men struggling along, to whom the expense was a burden.

The resolution was adopted.

The Business Committee moved the following resolution, which was adopted:

Resolved, That the Executive Committee be authorized to fix the price at which the Proceedings shall be sold.

The Business Committee introduced the recommendation to charge life members with the price of Proceedings; during the discussion it was stated that such an alteration of the Constitution could only be arrived at by the unanimous consent of the life and all other members.

The motion to charge life members with the Proceedings was lost.

The Business Committee moved the following, which was carried:

Resolved, That the subject of prizes, prize queries and medals be indefinitely postponed.

The Business Committee offered the following resolution, which met with general opposition and was lost:

In order to facilitate the business at the first session of the annual meetings,

Resolved, That the Committee on Credentials for the ensuing annual meeting be now appointed.

Professor Parrish offered the following resolution which was unanimously adopted:

Resolved, That the Permanent Secretary be directed to have custody of the specimens, medals, pictures, plans, books and periodicals, belonging to the

Association with the privilege of depositing them in the College of Pharmacy of Philadelphia, if that Institution should offer facilities for their proper storage and exhibition.

Dr. Squibb said there was a portrait of the late Mr. Carney presented to the Association from the Massachusetts College of Pharmacy. I move, as Chairman of the Business Committee, that this picture be accepted with the thanks of the Association to the Massachusetts College of Pharmacy, and that it be placed among the articles in possession of the Association.

The motion was carried.

The Chairman of the Business Committee stated that the only business to come before the Association was the recommendation of the President in regard to the internal revenue law as it affects licenses and sales and the cost of alcohol in pharmacy.

Professor Parrish read a paper on the English revenue law with special reference to alcohol.

On motion, it was accepted and referred to the Executive Committee.

Dr. Squibb.—This paper forms a good starting point for the subject before us; it shows the amount of machinery adopted to adulterate alcohol for pharmaceutical purposes, and yet the only good purpose claimed to be subserved is that Ether and Chloroform may be made from methylated spirit since it is admitted on all hands that for tinctures and the general uses of pharmacy it is utterly unfit. To ether and chloroform, which are manufactured on the large scale, the argument is not prominently applicable, these articles not coming within the scope of general pharmacy as do tinctures, &c. Even this adaptation to making ether, is doubtful, since, in my experience, the presence of any of these hydrocarbons tends to the production of unclean ether. Of late years and particularly since the rise of alcohol, manufacturers have in some way, by close distillation or otherwise, debased the quality so that from 95 per cent. alcohol, from which ether used to be well made, it cannot now be made clean; made from the same alcohol, in the same apparatus and by the same process, it is not clean enough for anæsthetic purposes; and to obtain it so, it has become necessary to resort to the use of cologne spirit. Just such a step had to be taken some years ago when 95 per cent. alcohol was as rare as cologne spirit is now. Good clean ether could then be made from 85 per cent. alcohol, as clean as was afterwards made from 95 per cent., or now from cologne spirit. As the market for alcohol rises, so the makers produce worse alcohol containing more hydrocarbons. The legitimate uses of pharmacutists are not benefitted by any adulteration of spirit. Besides this, the price of alcohol does not affect the pharmacist to the extent that is urged. Whatever the price of alcohol, he obtains the same profit he formerly did; so do the manufacturer's profits remain the same. Hence I

maintain that the interests of the Pharmacist are not so deeply involved in this question as at first sight they appear to be: the consumer is the person who pays. If we wish to diminish the price to the consumer, it is well to take up the question. In regard to the machinery necessary to lessen the price of alcohol to pharmacists, as described in Mr. Parrish's paper, I suppose that a similar plan might be adopted here; but I cannot see in what manner it would conduce to the benefit of the pharmacist as such, independent of the considerations which exist in reference to the consumer.

The next point is this: the object of the law is to raise revenue which is rendered necessary by debt. This revenue must be levied and paid by taxes upon articles of consumption. Is not alcohol as good a subject for taxation as any other? Should we desire to evade these taxes in their application to pharmacy simply because we have so careful a scrutiny of the interests of the consumer? Should we not rather allow it to be imposed, without objection on our part? If, however, after a fair trial, it should be found that it bears unequally, that it falls with more severity upon us than upon others, then we can take the matter up and bring it before the proper authorities. I am not opposed to any measures having in view an equalization of taxation, so far as they are intended to equalize, but my impression is that every step that is taken by any special business, or any special interest to reduce taxes is a step towards something like repudiation. I hope nothing will be done by this Association in that direction. Let us come up manfully and willingly and pay these taxes, and accept also the fact that the people in authority in Washington know what they are about. Let us pay such taxes as may come upon us until the time comes when we can show that they are not equitably placed. I am opposed to any interference with the national legislation upon the subject of taxation of alcohol. With regard to licenses, I think that upon fair representation of all the facts bearing upon the case, Congress has decided that the laws as they exist are necessary. There are, undoubtedly, some minor points in regard to which fair objection may be made. For instance we take out a manufacturer's license and pay a duty of 6 per cent. A manufacturer of patent medicines pays a stamp duty, only, which as the law now stands is but four per cent. A legitimate pharmacist therefore has to pay a larger tax than those engaged in the manufacture of illegitimate preparations. The operation of the law, therefore, is to encourage the sale of quack or patent medicines, to the prejudice of the legitimate business of the Apothecary. Upon this fact being brought before the proper authorities I have no doubt that the law will be amended so as to make the stamp duty exceed the sales duty. Now it is perfectly fair to represent anything of that kind, and let them rectify it if they please. If not, don't let us undertake to make them do it. Let us rather rest under it. Forbearance and self-denial should be cultivated in an Association like this—now if ever. Here, we should give all our influence against every action tending even in a lateral direction towards repudiation.

Mr. Colcord.—The member from Brooklyn has expressed my opinion exactly. I don't see why this Association should undertake any action in this matter when there is no possible advantage to be derived, even if they suc-

ceeded in amending the law. The principles on which we should stand, and the way in which we should meet this question, have been exactly stated by Dr. Squibb. A year or two ago there was a tax put upon patent medicines, one cent for every 25 cents, 4 for a dollar. They raised a Committee to go to Washington, and they wanted me to go on that Committee. I told these gentlemen, "If you raise a Committee to show the Government where it can advantageously lay an additional tax, or where they can put a tax upon something better I will go." The tax is none too large. It comes upon a class who can afford to pay for it. The only difficulty is that it bears unequally. If we can equalize the taxes it will be all right.

Mr. Procter.—Dr. Squibb spoke of the price of alcohol in its relation to the profits of the Pharmaceutist. There is another view of the matter which he did not take. I think, if we let this matter of the price of alcohol remain as it is, we must stop making fluid extracts. We must either stop making these extracts—for the poor cannot afford to pay the price we must ask for them—or we must seek some means of getting alcohol cheaper. I supposed that our action was to be directed to this point, and that some method was to be devised by which the Pharmaceutist could obtain alcohol to use in his business, without being subject to taxes, which are properly enough laid upon the consumer of the article as a beverage. A very large proportion of the alcohol used is in the form of tinctures. It does not do to say that the apothecary gets the same profit, or that they can add the same per centage. If we did, we should charge 50 cents per ounce for mixtures, whereas, we charge nearly the same price as heretofore. We have to meet a class of customers who cannot afford to pay present prices. The physicians have come to prescribe alcohol to a very large extent. This makes it additionally onerous. I speak from every day experience in my store, when I say that the poor cannot afford to pay the price for fluid extracts which we are compelled to charge.

Dr. Squibb.—There is one point connected with this matter of the poor, to which I wish to call attention. This same class of poor, who formerly earned but one dollar to one dollar and a half a day, now earn two or three dollars a day. The mechanics—those working in shops—whose families are to be medicated, now get \$3.50 per day, where they formerly got but \$2.00 per day. They are abundantly able to pay for the increased cost of medicines. They demand additional wages for that. A part of these additional wages justly belongs to the apothecary, and through him to the Government. I have some mechanics in my employ, whose wages have been increased to three dollars and a half a day, upon the very ground that, as consumers, they must pay these advanced prices. Now, these men do not, on the average, make more than five, and often only four days in the week. They live better now to work five days than they did to work six. The reason is, because Mr. Procter charges the old price for medicines, while they are demanding increased wages under the new order of things. Their families live well. Butchers will tell you that the high cost of meats is owing to the fact that families that formerly bought second and third pieces, are now able, owing to the increase of wages, to buy the best. Nobody wants the second and

third pieces. I mention these facts only to show that these people are able to pay for the medicines they require.

Mr. Colcord.—It is not the apothecary's business to look after the interests of the patient. That belongs to the physician. He should write recipes adapted to the means of his patients. If he wants to cheapen things for his customers, he can write for cheaper remedies, better than the apothecary can give what is ordered by the physician at half price. For instance, if senna infusion is wanted, let the physician prescribe senna, and let the patient infuse it himself, instead of having the apothecary to infuse it. Where the apothecary does the thing, he is bound to give a good article, according to the Pharmacopœia, and charge a good price.

Mr. Nichols.—If the increase in price was not so exorbitant, we should not have reason to complain. But the increase is not in proportion to other things. The increase is greater. We used to buy a pint of alcohol for four and a half cents, now we pay sixty. The margin is very great; I am inclined to think so great, that it bears very heavily upon the poor. We ought to look at that. There are two views to take: one patriotic, one as to the poor. There are men who depend upon druggists for their medicines; and the expense of medicines is a very serious matter. I think our friends from distant places can remember instances where people have brought in recipes which they have been unable to fill without charging a large price. If there could be devised means whereby the cost of alcohol could be reduced, it would yield as much revenue as it does to-day, with its excessive price. This heavy tax seems to me to be striking a blow at the industry of the country. We have lost, and are now losing entirely, the manufacture and sale of those articles into which alcohol enters. There are none shipped to the Provinces, none to Melbourne. These sources of revenue have all dried up, owing to the increase in the price of alcohol. I am inclined to think there should be some action taken in relation to this price of alcohol. I think our friends could devise some way by which alcohol, for our specific purposes, could be furnished at less price. The loss of alcohol is a considerable item. I am inclined to think that in no way does the druggist get back its cost. He cannot charge for tinctures in proportion to its cost. In relation to Dr. Squibb's views, it seems to me that the argument that people are receiving a greater amount of wages must be received with some reservation, as this greater amount of wages is consumed in the price of the necessary articles of living. The amount of money laid by is very small. When you come to medicines in which alcohol enters, they will not pay for them, if they can help it. I have talked with members of Congress on this point. They say, if any way can be devised to remedy this evil, they will act.

Dr. Pile.—I think there is a more important point, which concerns us all as Pharmacutists—this question of license. We are required to take out a license for selling alcoholic products, legitimately used as medicines. We are obliged to take out, in addition, a tavern-keeper's license, to sell, as medicines, brandy, wine, and whisky. I think this is a serious mistake made by the assessors. It was declared, in Philadelphia, that every druggist must take out a tavern-keeper's license. A physician orders three or four ounces of brandy; some

assessors declare that we can then sell unmixed liquors, others, that we must have a tavern-keeper's license. Then, again, some determine that all articles we make, make us manufacturers, and we must take out a manufacturer's license, in addition to the other licenses. We have to pay a druggist's store license, and, if the amount we manufacture is over \$600, we must pay an additional duty of 6 per cent. So, we pay our druggist's license, and two other licenses, although we confine ourselves to the legitimate business of Pharmacy.

Dr. Squibb.—This trouble all arises from the difficulty of discrimination. If it were possible for Congress, or the Parliament in Great Britain, to distinguish in favor of Pharmacutists, they would be glad to do so. So long as we have in the profession a class of men who are in the habit of selling spirituous liquors for other than medicinal purposes, so long it is impossible to control this difficulty; and we ought to be willing to subject ourselves to the extra taxation, to protect the Government against the other half of the profession. If the Government could safely say the American Pharmaceutical Association shall be free from taxation on alcohol, we should be placed upon our honor, and compelled to say, "We will not sell one drop, unless a physician prescribes; we will allow no dodging, but will see that no liquor be sold by Pharmacutists, except for medicinal purposes." Government would willingly do this, were it not for the fact that I have stated. It is notorious that a majority of druggists do sell spirituous liquors as a beverage. It is for this reason, and for this alone, that our legislators are suspicious about discriminating—that they make up their minds not to discriminate at all. Let us, therefore, as a minority of the profession, say, "We will stand our taxes." This difficulty about the difference of opinion on the part of the assessors may be legitimately taken in hand. I am in favor of any action tending to uniformity. If an assessor says that shaking up a bottle makes me a manufacturer, that Congress will stop at once. Representations have been made on this subject. It is not common among assessors. Only a few have decided to tax as manufacturers. That is palpably wrong. It is like making a man take out an additional license, because he has changed his place of business. I was required, by an assessor, to take out an additional license, because I changed my place of business, although I had notified him of my intention to change. The thing was corrected just as well without my refusing to pay, because it was palpably wrong. When such things come before Congress, they will be corrected. To tax apothecaries as liquor dealers is right. We can see that it is right, when we take into account the immense number of apothecaries who would take this means to increase their profits, and sell liquor to anybody, if this check was not put upon it. It would be another loophole, like illegitimate distillation. Whisky is only a few cents a gallon more than the taxes. It cannot be manufactured at less than sixty cents per gallon. The quantity of whisky on hand must have been large, or there must be illicit distillation all over the country. Many think it is illicit distillation that keeps whisky down. There is probably an immense amount of whisky made in the East and the West, which never pays one cent of taxes. The profits are immense. Do not let us obstruct the progress of that machinery which the Government has

been compelled to put in action for its protection. Let them go on, as seems best to them, to find out where these loopholes are, and to stop this illicit traffic. Let us be patient under our burdens; and when we have sufficient experience to know just where our troubles are, let us make an unassuming representation of the facts, and we shall find that all our grievances will be cheerfully examined and redressed.

Mr. Procter.—I think we ought to be willing to let Congress do its best in such a way as they see fit; but I do not see why we should let our grievances pass unnoticed. In the last Pharmacopœia certain liquors were made official and we are therefore bound to keep them. We cannot sell unmixed brandy, wine or whisky without having a license. The physicians order these liquors and we must break the law or take out a license. If we take out a license it is natural to suppose that we want to do enough business to pay for that license. We increase the quantity we sell. This puts temptations in the way of our clerks and apprentices. Some apothecaries may be considered as mere liquor dealers. They take out only a liquor dealer's license because that covers everything. We must either say "we cannot put up your prescriptions" or we must open dram shops. It will gradually fall into the habit of keeping liquors to deal out otherwise than as medicines.

Mr. Parrish.—I am sorry that this discussion has involved so many points at a time, yet, since it has taken a wide range, there are other points connected with it. I agree with Dr. Squibb that the government can do no other than tax apothecaries who sell liquor in any other way than by a physician's prescription. I have never known a decision which made it necessary for an apothecary who dispenses strictly by prescription, to have a separate license. I happened to go to Washington for our College of Pharmacy, and addressed the Committee on Ways and Means on that subject. The only way the government can collect revenue from the drinkers of liquor, is to lay universal taxes on the sale in every way except by physicians' prescription. Of course every conscientious apothecary would see that the prescription was legitimate. A man may get something like a prescription and bring it into our shop; then we refuse it. There are articles that we always refuse to sell, unless we know that the prescription is legitimate. If a physician prescribes, we have *the right* to sell it. The law says, "except in compounding physicians' prescriptions." The strict meaning of compounding never entered into their heads in Washington. They never framed the law to interfere with the prescribing of whisky or brandy for a patient. I know that some apothecaries sell liquor largely. It is the same for apothecaries to sell liquor as it is for any one else. I am very conscientious in regard to selling liquors. A person comes to me and wants a bottle of brandy. I say, "I don't sell it; the law don't allow me to. To sell it, requires a tavern-keeper's license." "Where shall I go?" the man says. "There is a store over the way." A man will come to my store at midnight, and ring the bell to get brandy, which may be needed, but I cannot furnish it without a prescription. These are disadvantages; you cannot have everything work smoothly. Spirits evidently ought to be taxed more heavily than anything else, and we must join hands and say, "tax it."

Allusion has been made to stamp duty. I wish to throw out the hint, that the stamp act is a premium to quackery. It was meant to operate against it. We pay the government *six* per cent. on medicines made according to the Pharmacopœia. A quack pays only the stamp taxes, *four* per cent: a man who does a legitimate business pays six per cent. I am of the opinion that as conservators of the public health, we ought to interpose to prevent an unequal bearing of the law.

Who are the people that are not earning anything? Dr. Squibb says wages are very high. How is it with the poor women, whose husbands have died in the course of the war, leaving them with families of a half a dozen children? There are numbers of such in all our cities. Let us go, as some charitable ladies have done, and see where the lower classes live, how they get their living,—and how intemperance and vice and the many evils that grow up in society, particularly in cities, are crushing these people down! They die for want of proper medical care, when sickness prevents their earning anything. It is upon these, the real and wretched poor, that the law is a burden, and its action oppressive. Take the one article of tincture of arnica, which the Pharmacopœia ought to direct to be made of the strongest alcohol. The poor use it in large quantities, as an external application. They have it on hand, and use it almost universally. Suppose the bottle tips over and gets spilled. I mention this as an illustration. Most important articles contain alcohol. There is hardly an apothecary who did not formerly sell largely of alcohol from his counter, for burning, and for use in the arts. The consumption would be vastly increased if it was cheaper; the tax is so large as to obstruct almost entirely the sale of alcohol, imposing at the same time a serious burden on the pharmacist. The question so far as regards the poor is this, whether if by giving a bond as they do in England, and having every apothecary in this country go before the government officers, enter into an agreement, vouched for and backed up by two respectable vouchers, that he will use so many gallons only of alcohol, exclusively for the legitimate purposes of pharmacy, and sell only for such purposes, whether he could not be profitably made an exception to the rule—whether with an excise officer on hand in his office, the rectifier could not be permitted to sell alcohol, to be used by the manufacturer, under bonds, in the manufacture of pharmaceutical preparations at a reduced rate of duty. Every body would know that this was the law, and if they found a manufacturer departing from it, they could inform the proper officer. Could not such an arrangement be made, and thereby the Pharmacist relieved from the operation of the law, in such degree as to reduce the cost of producing medicines to something like the old rates?

Dr. Squibb.—It appears to be as impossible to discriminate in favor of the poor as in favor of any body else. If it was possible to discriminate, the government would be glad to do it. It is impossible to discriminate in favor of Pharmacutists, because as a class they are no more honest than other people; they are no more to be trusted than others. It is this impossibility of discrimination that stands in the way. Procter's point in regard to taking out licenses as liquor dealers and the stimulus this offers to every apothecary is

very good indeed. It can only be answered in this way. It is one of the abuses that Congress did not provide for. It will be remedied by experience, and when it shall exhibit itself. Therefore let us wait until it does exhibit itself, and let Congress apply the remedy. If Congress makes it more onerous let us pocket the grievance and say, "we are contributing so much to the general fund." Let us say, "we are willing to be over taxed to prevent others from being taxed only partially." With regard to stamps, I alluded to that before. The stamp duty is four per cent. The sale duty is six per cent. The first tax was three per cent, and the tax on stamps was 4 per cent. That made a discrimination against patent medicines. Without remembering this fact Congress increased the manufacturers' duty to 6 per cent making a discrimination the wrong way. This will be repaired. The inequality is more apparent, however, than real. If a thing costs one cent above 25 cents, the duty is two cents. If one cent above 50 cents, three cents. If we take the average taxes it goes up to about 6 per cent. A saleable article at 75 pays 3 cents. If it sells at 76 it pays 4 cents. I am told that the general average is about 6 per cent.

Mr. Colcord.—The tax we pay is upon the wholesale price. This 4 per cent. is upon the retail price, more than this price. The tax is as much upon legitimate preparations as upon illegitimate. I maintain that the protection ought to be greater than it is, the difference ought to be 8 per cent.

Dr. Squibb.—In regard to the bearing of these heavy taxes on the poor, and the necessity of our coming to their relief, it is well known that a large share of the quack or patent medicines are sold to the poor. They will pay whatever is asked for a patent medicine—Mrs. Winslow's Syrup for instance—when they won't pay a fair price for a good article of laudanum, to have a better effect; they willingly pay for patent medicines, stamps and all, and as these are most largely sold to the poor, independent of Physicians' prescriptions, the taxes on them should be advanced, as well for the protection of the regular dealer, as to check the harm done by their indiscriminate sale and use.

Mr. Nichols.—I am still inclined to think that the Pharmacutists could present themselves to Congress with a show of justice, and ask a reduction of taxes. There is now a discrimination against the interests of that class, as well as against the interests of the poorer people. Mr. Parrish's remarks seem to be very excellent. He is looking in the same direction in which I have been looking. I am in favor of disconnecting this question from the other matters, and confining it to the question of procuring alcohol, of the ordinary commercial strength, at a reduced rate. If the question be confined to the reduction of taxes on alcohol, for Pharmaceutical use, and fairly presented, I think Congress would listen, and see just cause for a discrimination. Let alcohol be kept by some authorised party, and let the Pharmaceutist purchase 85 per cent. alcohol, free from taxation. I never heard of an instance where an Apothecary dealt in liquor as a beverage. I don't believe that a Pharmaceutist would use a pound for other than legitimate purposes.

Mr. Colcord.—This subject has interested me a great deal for the last few years. I had some conversation with Mr. Powers, of Powers & Weightman, about it. He has been in consultation with the Government about this very

matter. He told me that it was utterly impossible for the Government to discriminate between the tax on whisky and that on alcohol, they wanted to find some way to make such a discrimination. They made inquiries, and investigated the subject, but they found it utterly impossible to make any discrimination. My attention has been called to one man in particular, who makes all his wines and liquors from alcohol, using brandy and wine flavors. Most of the liquor sold by common retailers is fictitious, made from whisky, alcohol and various preparations. Some native wines are advertised without fermentation, and must, of course, be manufactured. The Government has tried its best to make a discrimination. So far as I am concerned, I go according to the Pharmacopœia in the sale of liquors, as in the sale of every thing else. I sell liquors as I sell arsenic, in suitable quantities for proper purposes. In this State the Maine law comes in. If a man sells liquor here, he would be liable to be sent to the House of Correction, for evading the Maine law. In order not to discriminate we are all liable to such penalty. In relation to alcohol there is another question to be considered; it is a commercial article, better adapted to discussion in the Board of Trade than among Pharmacœutists. Commerce will regulate its channels better than we can do in Pharmaceutical Associations. It is a matter for Boards of Trade and Congress. The way it ought to be reached, if the idea was to make a discrimination in the sale of the article, if the Pharmaceutical Association were extensive enough to embrace all reputable Apothecaries, on the principles which I have stated, the Government would be very happy to make a discrimination to exempt them from the taxes. If we should ever get influence enough, and become a chartered institution, giving all its members certificates of qualification, Government might be willing to make a discrimination, and give exemption from taxes or license in the sale of liquor. In relation to the subject of alcohol, and the cost of accidents, that should not belong to alcohol any more than to quicksilver. You might recommend, in case any thing was lost, that there should be a drawback on it. There is no other way in which you could reach that question.

Prof. Grahame.—I have been greatly interested in this discussion. So many difficulties are constantly arising, however, that you might go on discussing it all day, and not come to any unity of opinion. The whole thing seems to have resolved itself into one or two points. Can we present to the Government any plan whereby they can clearly, safely and thoroughly discriminate between alcohol for pharmacœutists' use and that which is made for general use? If this thing could be clearly presented it might be worth while to discuss it; according to my idea it cannot be presented. That not being the case, I doubt whether we can come to any conclusion by which the difficulty can be remedied. I don't think it can profit us to continue the discussion.

Mr. Close.—I move that the whole subject be referred to a Committee.

Dr. Squibb.—I ask that the duties of that Committee be defined. It is impossible to appoint a committee to take the subject into consideration, in all its branches; let the Committee be instructed to petition Congress, or do something or other. I was about to offer a resolution that after a long discussion, &c., &c., *Resolved*, That the subject be laid over in the thoughts and con-

sideration of the members for another year, each member to come prepared next year with the result of his considerations to discuss the matter again; then to decide what action can be taken, without a committee or the machinery necessary to a committee. A committee would only consider the subject in one or two points; we should consider it in every phase, and have more experience. Why not all be a committee?

Mr. Procter favored the appointment of a committee, to bring the subject before the Committee on Ways and Means. By the appointment of a Committee the object in view would be facilitated: the devising of some method whereby the cost might be lessened to Pharmacutists. A Committee could be authorized to address the proper authorities on the subject, and have consultations with them in furtherance of the object; while in the other case there would be a delay of a year without any organized action.

Dr. Squibb.—A Committee might be appointed to make an unostentatious investigation of the whole subject, and notify the Chairman of the Committee on Ways and Means that such a Committee had been appointed by the Association, who were ready to give any information he might desire, or to present the views of this Association, should he be desirous of hearing them; I don't wish to send any Committee to intrude their views. The men at Washington are very tenacious of their opinions. I knew a gentleman who went to Washington on a similar errand; the Chairman of the Committee said to him, "Mr. —, you had better go home. I have given considerable attention to this subject. I have the power of Congress to assist me, and to give me whatever information I require. When I want any advice from you I will send for you."

Mr. Barr suggested that every member write his views upon the subject, and present them to the Association. Then the Association could appoint a Committee to consider the whole subject as thus presented.

Mr. Colcord.—We appoint a Committee of five from as many different cities. The report would be written by the Chairman, and presented to the Association. Instead of being the report of a Committee, it would be the report of a single individual. Still I should like to see a Committee appointed, which would fairly represent the Association to the Committee of Ways and Means, and with which that Committee might confer.

The Committee should not, I think, undertake to give any information, unless the Committee on Ways and Means should ask for it. My opinion is that all has been done that can be done. That Committee has conferred with the best men upon the subject, and have been unable to do any thing in the matter. If this Committee be appointed, and we get a good Committee, each could make a report, and we should be five times as well off.

Mr. Taylor.—I suggest that each one of the Committee be requested to make a report.

Dr. Squibb.—My preference would be to have a Committee, and let it take its own course. I think it would be best to appoint a Committee, and, so far as the Government is concerned, satisfy ourselves with notifying the proper authorities that such a Committee has been properly appointed by the Association, and is accessible.

Mr. Taylor made some suggestions in regard to the duties of

the Committee, and offered the following resolution, which was accepted by Mr. Close as the substitute of the original motion :

Resolved, That a committee of five be appointed to take into consideration the relation of the whole subject of the Internal Revenue Law, in its relations to the objects of the American Pharmaceutical Association, with special reference to the alcohol question ; with authority to confer with the Committee of Ways and Means of Congress and the Commissioner of Internal Revenue, and who shall report to the Association at its next meeting.

The resolution was adopted.

On motion, it was

Resolved, That the President be authorized to appoint the Committee at his leisure, and notify the members of their appointment.

Mr. Tufts offered the following, to lay over until the next meeting :

Resolved, That the President appoint a Committee, whose duty it shall be to report a series of rules of order for the meetings of the Association.

The resolution was not adopted.

The Committee on Specimens presented some additions to their former report, which, on motion, were accepted, and ordered to be incorporated into the original report and referred to the Executive Committee.

REPORT OF THE COMMITTEE ON SPECIMENS.

The Committee on Specimens offered for exhibition at this meeting, report—
From A. P. MELSER, *Charlestown*,—

A fine specimen of *Ricinus communis*, (Castor Oil Plant,) in bloom ; also an improved Retort and Displacement Stand.

From Mr. GOULD, *Melrose, Mass.*,—

Ten specimens of indigenous medicinal plants : *Sarracenia purpurea*, (*Huntsman's Cap*) ; *Artemisia absinthium*, (*Wormwood*) ; *Leonurus cardiaca*, (*Motherwort*) ; *Lycopus Virg.* and *Europ.*, (*Bugle*) ; *Scutellaria laterif.*, (*Scullcap*) ; *Marrubium vulg.*

JAMES F. BABCOCK, *No. 7 Brown St., Boston*,—

Specimens of chemicals, chemically pure. Among the rarer ones, we particularly commend the following : Permanganate of Soda, Chloride of Cobalt, Carbonate of Copper, Soda Lime, Chloride of Copper, Metallic Copper, in powder.

W. F. SHAW, *Boston*,—

Ten samples of Gas Stoves, adapted to use in Pharmacy. They are simply modifications of the old upright cylinder, covered with wire gauze, but rendered, by combining two or more burners, available for large or small operations ; a commendable degree of elegance, in form and material, is also given to them.

CORNINGTON CORK Co., Lancaster Pa.,—

Sample lot of superfine machine-cut corks, showing a great degree of improvement in recently invented machinery for the purpose.

PERKINS, STERN & Co., Boston,—

Samples of California Hook, Muscatel, Angelica and Port Wines; Grape Brandy.

G. D. Dow, 525 Washington St. Boston,—

Samples of preserved Raspberry, Strawberry, and Pineapple juices, put up with sugar, without heat, for flavoring syrups and ices. Also, Blackberry, Elderberry, Currant and Grape Wines. Also, a patent Ice Cream Soda apparatus, which, from its elegance and beauty, combines the advantages of saving ice, by shaving it into the tumbler, and of dispensing the syrups readily. The great improvements made in this class of apparatus during the past few years, leave little further to be desired.

ANDREW J. MORSE & SON, 40 Congress St. Boston,—

Improved Soda Draught Apparatus, similar in external form and size to the preceding; differing, however, and advantageously so, in ready means for filling the syrup cans, and in the means by which the contents of the syrup cans are at all times known. Also, finely finished Copper Fountains, with Morse's Patent Cook.

S. MASON McCOLLIE, Philadelphia,—

Specimens of Meig's Watch Spring, Gutta Serena Ring, and Double S Passaries.

HENRY W. LINCOLN, Boston,—

New form of Herb Cutter.

J. R. NICHOLS & CO., Boston,—

Elixir of Valerianate of Ammonia, Valerianate of Zinc, Elixir of Peruvian Bark and Protoxide of Iron, Nitrate of Ammonia, Citrate of Iron and Strychnia, Chloride of Calcium, Acetic Cantharidal Vesicant, Monsel's Persulphate of Iron, in powder, Citrate of Iron and Quinine, in scales, Soluble Citrate of Iron, Iodoform, Fluid Extract of Valerian, Chloride of Zinc, Chloride of Potassium, Biniodide of Mercury, Hypophosphite of Lime, Pyrophosphate of Iron, Ammonio-Ferric Alum, Valerianic Acid, Ammoniated Copper, Butyrate of Ethylic Ether, Acetate of Amylic Ether, Valerianate of Amylic Ether, Tartrate of Iron and Potassa, in scales, and Liebig's Food for Infants.

R. H. SARGENT, Chicago,—

Citrate of Bismuth and Ammonia, Citrate of Iron and Strychnia, in scales, Subsulphate of Iron, in powder, Citrate of Iron and Quinine, Liq. Bismuthi.

B. O. & G. C. WILSON, 18 and 20 Congress St., Boston,—

Samples of Prepared Herbs, an evident improvement on the Shaker style. The following are particularly commended for the manner in which they have been cased, preserving color and odor: Sage, Elder Flowers, Peppermint, Souleap, Catmint, Sweet Marjoram. Total specimens, sixteen. The style in which these herbs are prepared, wrapped, and labelled, is also commended.

CHAS. SHIVERS, Philadelphia,—

Specimens of Spread Adhesive Plaster; also, Spread Aconite, Belladonna, and Opium Plasters, Disguising Wafers, and Court Plaster.

BRAY & HAYES, 145 Milk St. Boston,—

Specimens of importations of Scotch Oat Meal, Ext. Beef, Dietetics, etc.

D. P. IVES & Co., 47 Milk St., Boston.

KELLY & EDMONDS, 156 Washington St. Boston.

KEDER & MERRIAM, 186 Washington St., Boston.

} Exhibit Druggists' sundries.

PARRISH & MELLOE, Philadelphia,—

Sample of Extract of Hyoscyamus.

DR. W. H. PILE, Philadelphia,—

Various instruments manufactured by himself, consisting of Specific Gravity Bottles, Hydrometers, Alcoholometers, graduated Pipettes, &c.

F. STARNES, *Chairman*,

R. H. STANLEY,

G. F. H. MARKOW,

Committee.

On motion of Prof. Parrish, it was

Resolved, That the thanks of the Association are due, and are hereby tendered to the Corps of Reporters who have so faithfully attended our several sittings.

There being no further business before the Association, the Minutes of the several sessions were read, corrected, and adopted.

On motion, it was

Resolved, That we now adjourn, to meet at Detroit, Michigan, on the fourth Wednesday of August, 1866, at 3 o'clock, P. M.

The Association then adjourned.

J. M. MAISCH,

Recording Secretary.

The President, Mr. H. W. Lincoln, subsequently informed the undersigned of the appointment of the following Committee on the Internal Revenue Law, in accordance with the resolution passed at the last session :

Dr. Edward R. Squibb, Brooklyn, N. Y., *Chairman* ;

Samuel M. Colcord, Boston ;

William Procter, Jr., Philadelphia ;

J. Faris Moore, Baltimore ;

Eugene L. Massot, St. Louis.

These gentlemen were duly notified of their appointment.

J. M. MAISCH, *Rec. Sec.*

REPORTS OF COMMITTEES.

REPORT ON THE PROGRESS OF PHARMACY.

The Chairman of the Committee on the Progress of Pharmacy would, in submitting this report, express his regret—though appreciating the honor—that the choice of Chairman has fallen on him, as circumstances over which he has had no control, and of which, at the time of his election, he had no knowledge, have prevented his giving that attention to the subject which its merits require, and which should be expected from the successors of such able compilers as those who have preceded him. The Committee has not been able to consult near all the periodicals which it has been the privilege of former Committees to review, but they have, as far as has been in their power, endeavored to refer to all important facts which have come under their observation from the limited number of works in their possession. It is greatly to be regretted that the foreign journals did not come into the hands of the Committee until very recently; the majority of them being received after the first of August. The following list embraces all the publications which they have been enabled to consult,—viz.:

American Journal of Pharmacy,	<i>Am. J. Ph.</i>
American Druggists' Circular,	<i>Am. D. Circ.</i>
Hays' Journal,	
Neues Jahrbuch für Pharmacie,	
Neues Repertorium für Pharmacie,	
Vierteljahresschrift für Pharmacie.	

The Chairman of the Committee, laboring under the great disadvantage of not being acquainted with foreign languages, would express his thanks to Mr. Lewis Dohme, of Baltimore,

for his zealous efforts in behalf of this department. Limited as his time has been, owing to the late arrival of the Journals,—to say nothing of his personal occupations,—he has labored untiringly to accomplish the work in hand.

The past year has afforded but little of special interest to the pharmacist. The progress of pharmacy in our country still continues affected, to some extent, by the late disturbed condition of affairs; but it is to be hoped that the renewal of fraternal intercourse between all sections may speedily bring forth many facts and discoveries made during our past years of trouble. The continued advanced price of material has prevented the investigation of many substances, which would otherwise have claimed and received the attention of the pharmacist. The Committee propose, as far as is practicable, to classify their material according to the arrangement of previous years, and, at the same time, would respectfully solicit of the Association further time to arrange their report, previous to its being placed in the hands of the printer.

The following publications are those which the Committee have noticed as appearing within the last year:

ENGLISH PUBLICATIONS.

Essays on Infant Therapeutics. To which are added Observations on Ergot; History of the Origin of the Use of Mercury in Inflammatory Complaints, etc., etc. By John B. Beck, M. D. Third Edition, enlarged and improved. 12mo., pp. 167. New York: Wm. Wood & Co. \$1.00.

The American Dispensary. By John King, M. D. Sixth Edition, revised and enlarged. 8vo., pp. 1509. Cincinnati: Moore, Wilstach & Baldwin. Sheep, \$9.00.

Principles of Chemistry, embracing the most recent discoveries in the Science, and the Outlines of its Application to Agriculture and the Arts. A new Edition, enlarged and improved. 325 Illustrations, exhibiting Parlor and Lecture Room Experiments. By Prof. John A. Porter, A. M., M. D., of Yale College. 12mo., pp. 631. New York: A. S. Barnes & Burr. Cloth, \$1.75.

A Practical Treatise on the Fabrication of Matches, Gun Cotton, Colored Fires, and Fulminating Powders. By Prof. H. Dussance, Chemist. 12mo., pp. 336. Illust. Philada.: H. C. Baird. Cloth, \$3.00.

An Inquiry into the Physiological and Medicinal Properties of Veratrum Viride: together with some Physiological and Chemical Ob-

servations upon the Alkaloid Veratria, obtained from this and other species. A Prize Essay. By Samuel R. Percy, M. D. 8vo., pp. 87. Philada.: Collins, Printer. Paper, \$1.00.

New Remedies, their Pathogenetic Effects and Therapeutical Application in Homœopathic Practice. Edited by Edwin M. Hale, M. D. 8vo., pp. 448. Detroit: E. A. Lodge. Cloth, \$2.50; half moroc., \$3.00.

Thoughts on the Influence of Ether in the Solar System; its Relations to the Zodiacal Light, Comets, the Seasons, and Periodical Shooting Stars. 4to. Philada.: Sherman, Son & Co. Paper, 50 cts.

The Army Surgeon's Manual, for the use of Medical Officers, Cadets, Chaplains, and Hospital Stewards; containing the Regulations of the Medical Department, all General Orders from the War Department, and Circulars from the Surgeon-General's Office, from January 1st, 1861, to July 1st, 1864. By Wm. Brace, of Washington, D. C. 12mo., pp. 200. New York: Balliere Bros. Cloth, \$1.50.

Therapeutics and Materia Medica. A Systematic Treatise on the Action and Uses of Medicinal Agents, including their Description and History. By Alfred Stillé, M. D. Second Edition, revised and enlarged. 2 Vols.. Royal 8vo., pp. 776, 819. Philadelphia: Blanchard & Lea. Cloth, \$10.00.

Schultz & Warker's Mineral Spring Waters, their Chemical Composition, Physiological Action, and Therapeutical Use; with a Short Review of the History of Mineral Waters. By Carl Schultz. 8vo., pp. 71. New York: B. Westermann & Co. Paper, 50 cts.

Medical Lexicon. A Dictionary of Medical Science, containing a Concise Explanation of the Various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, &c., &c. By Robley Dunglison, M. D., LL. D. Thoroughly revised, and very greatly modified and augmented. 8vo., pp. 1047. Philada.: Blanchard & Lea. Cloth, \$6.00; Sheep, \$6.75.

The Dispensatory of the United States of America. By George B. Wood, M. D., and Franklin Bache, M. D. Twelfth Edition, carefully revised. 8vo., pp. xii, 1704. Philada.: J. B. Lippincott & Co. Sheep, \$10.00.

Annual of Scientific Discovery; or, Year Book of Facts in Science and Art for 1865. Edited by David A. Wells, A. M., M. D., etc. 12mo., pp. 355. Boston: Gould & Lincoln. Cloth, \$1.75.

A Treatise on the Assaying of Lead, Copper, Silver, Gold, and Mercury. From the German of Th. Bodemann and Bruno Kerl. Translated by W. A. Goodyear, Ph. D., &c. 12mo., pp. 214. Plates. New York: John Wiley & Son. Cloth, \$2.50.

A New and Complete Treatise on the Art of Tanning, Currying, and Leather-Dressing, etc. By Prof. H. Dussance, Chemist. 8vo., pp. 710. Illustr. Philada.: H. C. Baird. Cloth, \$3.00.

Coal Oil and Petroleum. Their Origin, History, Geology, and Chemistry, with a View of their Importance in their bearing upon National

Industry. By Henry Erni, A. M., M. D. 12mo., pp. 196. Philadelphia: H. C. Baird. Cloth, \$2.50.

Pereira's Physician's Prescription Book, containing Terms, Phrases, &c., used in Prescriptions. Philada.: Lindsay & Blakiston. Cloth, \$1.25.

Wythe's Pocket Dose and Symptom Book. Containing the doses and uses of all the principal articles of the *Materia Medica*, and Official Preparations, Table of Weights and Measures, Rules to proportion the Doses of Medicines, &c. Philada.: Lindsay & Blakiston. Cloth, \$1.00; Leather, pockets, \$1.25.

Beasley's Book of Prescriptions and Remedies. Second American, from the last London Edition. Price, \$4.00.

Biddle's Work on Materia Medica. New Edition. For the use of Students. Illustrated. This work is recommended as worthy of note as a text book.

Stimulants and Narcotics. Their mutual relations, with especial researches on the Action of Alcohol, Ether and Chloroform on the vital organism. By F. E. Ainstie, M. D., Assistant Physician to Westminster Hospital, etc. Preparing. Philada.: Lindsay & Blakiston.

Darby's Practical Pharmaceutical Chemistry. Fifth Edition. J. Churchill & Sons.

On Poisons, in relation to Medical Jurisprudence. By — Taylor, M. D. J. Churchill & Sons.

By the same author, **A Manual of Medical Jurisprudence.** J. Churchill & Sons.

First Lines for Chemists and Druggists. By J. Stegali, M. D. J. Churchill & Sons.

Wayne's Medical Vocabulary. Second Edition, enlarged. Explaining Names, Terms, Synonyms, &c. J. Churchill & Sons.

Fresenius' Chemical Analysis. Edited by Lloyd Bullock. Qualitative, Sixth Edition. Quantitative, Third Edition.

Chemistry, as exemplifying the Wisdom and Beneficence of God. By George Fownes, F. R. S. Second Edition. Cloth.

By the same author, we have **Introduction to Qualitative Analysis.** Cloth.

Bowman's Medical Chemistry. Edited by C. L. Bloxam, Professor of Practical Chemistry. J. Churchill & Sons.

A Hand-book of Chemistry; Theoretical, Practical, and Technical. By F. A. Abel, F. R. S.

Fowne's Manual of Chemistry. Edited by H. B. Jones, M. D., F. R. S., and A. W. Hoffman, Ph. D., F. R. S. Ninth Edition.

The Use of the Blow-pipe. By Plattner & Muspratt. Third Edition.

The First Step in Chemistry. A new method. By R. Galloway. Third Edition.

By the same author, **The Second Step in Chemistry.** Mr. Galloway also gives **A Manual of Qualitative Analysis.** Fourth Edition.

The Book of Perfumes. By Eugene Rimmel. Chapman & Hall. It contains above 250 illustrations.

Manual of Practical Therapeutics. By E. J. Waring, F. R. S., &c. J. Churchill & Sons.

A Manual of Diet and Regimen, for Physician and Patient. By H. H. Dobell, M. D., M. R. C. P., etc. J. Churchill & Sons.

A Course of Practical Chemistry for Medical Students. Second Edition, with 70 new wood-cuts. By Wm. Odling, M. D., F. R. S., etc. London: Longman, Green & Co.

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In conclusion, I would express my regrets at being unable to give a more concise account of the state of Pharmacy in foreign countries.

Respectfully submitted,

J. FARIS MOORE,
Chairman Comm. on the Progress of Pharmacy.

PHARMACY.

APPARATUS.

Machine for counting Pills. Mr. Burton, of the Novelty Iron Works, New York, has invented a novel machine for the purpose of counting and boxing pills, percussion caps, or other similar articles, that require an exact number in each package. Am. Artisan.

Pharmaceutical Still. Mr. A. F. W. Neynaber gives a description of a pharmaceutical still, which is calculated to be of great use in pharmacy. Am. J. Ph., xxxvii. 3, p. 166.

FLUID EXTRACTS.

N. Spencer Thomas publishes a new process for making Fluid Extracts without evaporation. Am. J. Ph., xxxvii. Am. D. Circ., ix. 5, 85.

INFUSIONS.

Mr. S. Grundy recommends percolation in the preparation of concentrated infusions. Am. D. Circ., ix. 107.

PILLS.

Pil. Ferri Carbonatis. Mr. P. W. Bedford suggests exchanging the weight of honey (oz. ii.) and sugar (oz. iii.) in this preparation. Am. J. Ph., xxxvii. 183.

Pil. Ferri Iodidi. Mr. P. W. Bedford presents the following formula for these pills :

Take of Iodine, 80 grains,
Reduced Iron, 40 grains,
Water, 25 minims,
Honey, 80 grains,
Marshmallow, in fine powder, 120 grs.

Rub the Iodine in a mortar to a fine powder, afterwards add the water and honey ; then the reduced iron, in portions. Triturate until the Iodine is converted entirely into Iodide. The marshmallow is then added, and the mass to be divided into ninety-six

pills. This is very convenient for dispensing, as it forms a more pliable mass than the official. *Am. J. Ph.*, xxxvii. 3, p. 184.

MIXTURES.

Blue Ink from Prussian Blue. By the following process M. Vogel has always obtained a good solid blue ink with Prussian Blue and Oxalic Acid: Dissolve in a matrass, in a large quantity of water, ten grammes of sulphate of protoxide of iron; boil, and then add sufficient nitric acid to sesquioxidize all the iron. Then add a solution of yellow prussiate of potash, containing ten grammes of this salt, and leave the precipitate to deposit. After decanting the supernatant liquid, throw the deposit on a filter, wash it with cold water, and leave it to drain until it can be easily raised from the filter with a knife. Then, without further drying, mix it in a porcelain mortar with two grammes of oxalic acid in crystals. Let the reaction continue for an hour, then gradually add 400 cubic centimetres of water. This produces a dark blue solution, which, even after long standing, does not precipitate. *Moniteur Scientifique*.

Chlorodyne. Charles Bullock has examined Davenport's original Chlorodyne. He considers about two-thirds of this substance to be treacle: the remaining one-third, chloroform, in which the alkaloids have been previously dissolved, a small amount of water, some peppermint and capsicum, and perhaps a little cannabis indica. The following formula, by Dr. Ogden, will furnish a preparation having the pharmaceutical properties of Chlorodyne:

Take Muriate of Morphia,	viii. grs.
Water,	fl. 3ss.
Perchloric Acid, (25° B.)	gtt. xx.
Chloroform,	fl. 3ss.
Tinc. of Indian Hemp,	fl. 3i.
Hydrocyanic Acid, (U. S. P.)	gtt. xii.
Molasses,	fl. 3ss.
Oil of Peppermint,	gtt. ii.
Oleoresin of Capsicum,	gtt. i.

To the morphia and water in a small flask, add the perchloric acid, and heat until a clear solution is obtained. Then add the

molasses, previously warmed to render it fluid. Heat the mixture, and agitate well. When cold, the other ingredients are to be thoroughly mixed with it. Am. J. Ph., xxxvii. 1, p. 17.

Cochineal Coloring. This coloring may be prepared without admixture of carbonate of potash, alum, etc., as follows :

Take of Cochineal, in powder,	3i.
Spirit of Wine,	3ii.
Water,	3vi.

Liq. Ammon. Fort., q. s, about viij. minims.

Mix the spirit and water, and in three ounces of the mixture, heated to near the boiling point in a flask, infuse the Cochineal for fifteen minutes. Pour the infusion into another vessel, and repeat the process, with three ounces more of the mixed spirit and water; and a third time, with the remaining two ounces. Let the liquid stand till cold, when some fatty matter will rise to the surface; filter, adding spirit and water, up to eight fluid ounces. Then add Liquor Ammon. Fort., q. s., to change the infusion to the desired tint. Am. J. Ph., xxxvii. 8, p. 192.

OINTMENTS.

Carbuncle. Dr. Gutzeit, of Riga, recommends the following ointment in the treatment of this painful disease,—viz. :

Take half a drachm of opium to two ounces of white ointment; of this, spread on a linen rag a sufficient quantity, to the thickness of the back of a knife. This to be renewed three or four times daily. Am. D. Circ., Aug., 1864.

Glycerin. Mr. F. B. Bengel, in a paper on the pharmaceutical application of Glycerin, gives the solubility of different substances in it, and recommends it as superior to fats in the preparation of certain ointments. Am. J. Ph., xxxvii. 1, p. 61. Am. D. Circ.

Plasma. F. Baden Bengar recommends Tous-les-mois starch as the best from which to make Plasma. Am. D. Circ., ix. 106. Am. J. Ph., xxxvi. 6, p. 529.

Rancidity of Fats. Mr. Thomas B. Groves recommends the addition of a small portion of an essential oil, especially the oil of pimento, as a preservative of ointments. Am. D. Circ., ix. 6. Am. J. Ph., xxxvii. p. 54.

PLASTERS.

Adhesive Tissue. Dr. Fort suggests the following as a substitute for the English Isinglass Plaster,—viz.:

Choice Gum Arabic, 5 drachms,
Distilled Water, 8 “
Glycerin, q. s.

Dissolve the gum in the water, and add sufficient glycerin to render the mucilage of the consistence of syrup. Am. J. Ph., xxxvii. p. 254.

Arnica Plaster. Fred. C. Orth gives several formulas for the preparation of Arnica Plaster. He recommends a small portion of Burgundy Pitch. Am. J. Ph. xxxvii. 247.

SOLUTIONS.

Liquor Bismuthi. Mr. Thomas P. Blunt gives a formula for this preparation, which is said to possess some advantages over that of Mr. Tichbourne. Am. J. Ph. xxxvii. p. 286.

SYRUPS.

Syrup of Chloroform. Mr. T. B. Groves prepares a syrup of Chloroform by reducing Chloroform with Ether to the same specific gravity as syrup, by the following formula: Put into a 12 oz. bottle 1 oz. of Chloroform, and about three drachms of Ether; to the mixture add the same volume of the syrup to be employed. Observe carefully the disposition of the fluids; the Chloroform and Ether will probably sink. Then add, drop by drop, more Ether, until the two liquids, on being shaken together, appear indifferent as to their position. Finally, fill up the bottle with the syrup, and shake it well for a minute or two.

The syrup to be used should be composed of gum and sugar, of honey or treacle. Syrup of sugar does not answer well, on account of want of viscosity. Am. D. Circ.

Syrup of Iron and Cinchona. M. Grimault gives the following formula for making a perfectly limpid and agreeable-tasted syrup of Iron and Cinchona:—Take of pyrophosphate of iron and soda, 10 grammes; distilled water, 800 grammes; sugar, 700 grammes. The iron salt is dissolved in the water, and the sugar is added to it in a water bath. The liquor is then filtered,

and should be perfectly transparent. Now dissolve 5 grammes of hydro-alcoholic extract of red cinchona bark in 100 grammes of alcohol, filter, and add the solution, cold, to the syrup of pyrophosphate of iron and soda. Each teaspoonful of the syrup contains about $1\frac{1}{2}$ grains of extract cinchona, and double that amount of the double phosphate. Am. D. Circ.

TINCTURES.

Tinct. Opii. Geo. A. Gross gives a process for the preparation of Laudanum, in which he uses but one-half the alcohol directed in the official tinctures. He also gives a formula for the *Tinct. Opii Camph.*, by which it is rendered clear at all temperatures. Am. J. Ph. xxxvii. pp. 249, 250.

MATERIA MEDICA.

ANONACEÆ.

Oabig Bark. Prof. Mayer describes this bark as containing a large per centage of berberina. It is said to be of Japanese origin. Prof. F. M. suggests that it may belong to the family of Anonaceæ, and be identical with a tree indigenous to Sierra Leone and Soudan, the bark of which is known in England as Abeocouta Bark. Am. J. Ph., vol. xxxvii. p. 178.

CUCURBITACÆ.

Pepo as a remedy for Tape Worms. E. Ingallas, M. D., reports a case of successful treatment of *Tænia* by means of Pumpkin seed, administered in the form of an emulsion, made from 1 oz. of pumpkin seed deprived of their shells, together with ziv. of sugar and 3vi. of water. Of this emulsion he gave one third every hour, whilst fasting from supper until morning, and in one hour after the last dose 3ss. of castor oil. This failing to act on the bowels, after three hours 3i. more of castor oil was given, which produced only a laxative effect. Afterwards administered the same emulsion at two doses (patient fasting) followed by a brisk cathartic, which caused the expulsion

of an entire *Tænia* twenty two feet long. Dr. I. recommends an active cathartic in all cases, after the emulsion, as it is calculated to expell a worm enfeebled by the effects of the medicine, but not to a degree to insure its death if left in the alimentary canal. Am. D. Circ.

KRAMERIACEÆ.

Savanilla Rhatany. Mr. D. Hanbury, F. L. S., states that *Savanilla Rhatany* is derived from the *Krameria Ixina*. Am. J. Ph., xxxvii. 3, 193.

EUPHORBIACEÆ.

Croton Tiglium. M. Susin believes he has recognized the presence of an alkaloid in the seed of *Croton Tiglium* like *Cascarillin*; and which crystallizes like it, but differs by its relations with sulphuric and nitric acids. Am. J. Ph., vol. xxxvi. v. p. 418.

Croton Oil. Mr. R. Warrington, F. R. S., states that alcohol is of no value as a test for *Croton Oil*, as the oil expressed from fresh seed does not dissolve in the alcohol of sp. gr. 794—796. Am. J. Ph., xxxvii. 3, p. 191.

ZYGOPHYLLACEÆ.

Barth & Hlasiwetz have obtained two new acids, the products of the decomposition of *Guaiac resin*, when melted together with three times its weight of caustic Potassa. They are respectively composed of $C_{14}H_6O_8$, $2HO$ and $C_{18}H_{10}O_6$. Ann. Ch. Pharm. cxxx. 346. N. Jahrb. Ph. xxii. 267.

GUTTIFERÆ.

Gamboge. Mr. D. Hanbury, F. L. S., after examining the botanical properties of this substance, concludes that it has its origin from the *Garcinia Morella* of M. Desrousseaux. Am. J. Ph. xxxvii. 2, p. 150.

LEGUMINOSÆ.

Caramania Gum. Prof. Procter gives a description of this substance, and states that it is one of the adulterations of *tragacanth*. Mr. Hanbury, in a note, states that the *caramania gum* appears identical with the "*Gomme pseudo-adragante*" of Mr.

Guibourt, who considers it as the product of the *Astragalus gumi-*fer. Am. J. Ph., xxxvii. 2, p. 105.

Calabar Bean has been exhibited in the form of an extract with success, as an antidote for poisoning by *Atropia*. Am. J. Ph., vol. xxxvii. p. 302.

Balsam Tolu. J. Weiss publishes an interesting account of his observations and researches regarding the source and mode of collection of *Balsam Tolu*. Pharm. Journ. and Trans., Aug., 1864. N. Jahrb. Ph., xxii. 342.

CUPULIFERÆ.

Galls. Prof. Archer, in notes on *Materia Medica*, in the London Journal of Pharmacy, describes several new varieties of Galls, some of which are rich in Gallic Acid. Am. J. Ph. xxxvii. p. 186.

PIPERACEÆ.

Cubebs. An article under the name of African Cubebs, resembling in some respects the officinal cubebs, but possessing none of the latter's specific effect upon the urinary organs, is spoken of by Prof. Archer. Am. J. Ph., xxxvii. 3, p. 188.

Oil Pimento. Careful researches by Oeser confirm the chemical identity of this oil with oil of cloves. N. Jahrb. Ph., xxii. 339.

LAURINEÆ.

Sacred Bark. Under this name an oriental aromatic bark has been offered. It has been referred by several to a *Laurinea*. Am. J. Ph., xxxvii. p. 179.

SAPOTACEÆ.

Caoutchouc. Two new sources of this most valuable substance have lately been discovered, one in South America the other in Java. By the name of *Balata*, specimens of a new variety of *Caoutchouc* were received in London from British Guiana through W. Holmes, which in its physical properties stands between *Caoutchouc* and *Gutta percha*, possessing the elasticity of the former and tenacity of the latter, but melting at a much higher temperature than either. W. Holmes succeeded, after a series of experiments, of discovering the means of quickly solidi-

fying the milky juice of the Bullet tree, by the admixture of some simple and cheap substances, which do not in the least affect the elasticity of the Balata. The Bullet tree, *Sapota Mulleri* Mig. (?) grows very extensively in Guiana and other regions of northern South America.

The other variety has made its appearance in commerce under the name of Akar Karet, and is the product of a climbing plant belonging to the family of Apocynæ, from which it is obtained by making incisions in the stem and exposing the exuding milky juice to the atmosphere for several days, when it becomes sufficiently solid to knead it into cakes or blocks. The plant is, like the *Ficus elastica*, (the source of ordinary Caoutchouc), a native of Java, where it grows very abundantly. The Akar Karet not only possesses all the valuable properties of ordinary Caoutchouc but is dryer, not sticky, and more elastic. N. Jahrb. Ph. xxii. 157.

CONVOLVULACEÆ.

Resina Jalapæ, P. B. Mr. A. F. Haselden, after experimenting with this resin, concludes, that the worm-eaten jalap is inferior for the preparation of resin of jalap. The Tampico is a valuable substitute for the Vera Cruz jalap. He considers methylated spirit objectionable in this and similar resins or extracts. He does not consider sulphuric acid a distinguishing test between jalap and scammony resin. Am. J. Ph., vol. xxxvii. p. 273.

RUBIACEÆ.

Rubia Munjista. Stenhouse obtained from the root of *Rubia munjista*, known in commerce as Munjeet, coloring principles similar, though not identical, with those of ordinary madder. Munjistin, a peculiar yellow-coloring principle, was found to consist in its combination with oxide of lead, of $C_{30}H_{25}O_{25} + 6 PbO$. Purpurin, a red coloring principle, was obtained by repeated solutions and recrystallizations from alcohol, in dark red needles, possessing all the properties of the purpurin obtained from common madder, and consisted of $C_{18}H_8 O_6$. Ann. Ch. und Pharm. cxxx. 325. N. Jahrb. Ph. xxii. 266.

CINCHONACEÆ.

Cinchona Leaves. M. De Vry suggests a tincture made from cinchona leaves as a preventive against jungle fevers. Jour. de Chim. Méd. Am. J. Ph., vol. xxxvii. p. 253.

Calisaya Bark of Commerce was found by Howard & Henkle to be largely mixed with short pieces of the bark of the root. Analysis proved that this latter contained but a comparatively small proportion of alkaloids, 8.14 parts in a thousand, and of this only 3.06 was quinia in its pure state, the balance being quinidia. The substitution of the latter alkaloid for quinia in the root points to a probable change which quinia may undergo in the descending sap, $C_{40}H_{24}N_2O_4 + 6HO$ being converted into $C_{40}H_{24}N_2O_4 + 4HO$. N. Jahrb. Ph., xxii. 268.

COMPOSITÆ.

Effects of Oil of Wormwood. M. Marce has lately given an account of some experiments which prove that oil of wormwood in doses of from three to eight grammes, produces poisonous but not fatal effects. Trembling, stupor and insensibility are produced, with epileptic convulsions and stertorous breathing. The experiments throw some light on the nervous symptoms which follow the excessive use of absinthe. Brit. Med. Journ.

SCROPHULARIACEÆ.

Digitalis. Dr. S. Barrett gives the particulars of a case of delirium tremens which was successfully treated with large doses of the tincture of digitalis. Buffalo Med. and Surg. Journ., Jan. 1865. Hays' Journ., 1865.

SOLANACEÆ.

Iodide of Nicotin. According to Huber, this salt is deposited from a mixture of ethereal solutions of iodine and of nicotin, in ruby colored needles of the composition $2C_{10}H_{14}N_2, 3I_2$. When these crystals are dissolved in chlorhydric acid, the solution deposits on evaporation a compound consisting of $3H_{14}C_{10}N_2, 3I, 2HCl$.

Bromide of Nicotin. When an ethereal solution of nicotin is gradually dropped into one of bromine, blood-red oily drops sepa-

rate, which are deposited from an alcoholic solution as light red crystals of the composition $C_{20}H_{12}N_2Br_8$. Ann. Ch. Pharm. cxxxi. 257. N. Jahrb. Ph., xxii. 239.

CONIFERÆ.

Larch Bark in Chronic Bronchitis. Dr. Headland Greenhow recommends the tincture of larch for those patients who have suffered from repeated attacks of bronchitis, where copious expectorations continue after the acute symptoms have subsided and the object of the physician is to check rather than encourage continuance of the expectoration. It may be given in doses of from twenty to thirty minims combined with gentian, nitro-muriatic acid and water; also tincture of hyoscyamus or compound tincture of camphor may be added, regulated by the frequency and severity of the cough. Med. Times and Gaz.

MARANTACEÆ.

Adulteration of Arrow Root with Potato or Corn Starch. This adulteration, according to J. F. Albers, is certainly detected by means of their behaviour towards hydrochloric acid. If one part of arrow root shaken with three parts of a mixture of two parts parts hydrochloric acid of 1.12 sp. gr. and one part of distilled water, at ordinary temperatures, for about three minutes, no reaction is observable. But should corn starch be subjected to this treatment, it becomes changed into a gelatinous, translucent, and finally into a semi-fluid mass. Potato starch behaves in the same way, with the production of an easily recognized and characteristic smell. Am. J. Ph., vol. xxxvi. v. p. 422.

LILIACEÆ.

Aloes. Jacobsen observed, whilst testing a bitter tincture, that aloes may be entirely separated from its solution by means of animal charcoal. N. Jahrb. Ph., xxii. 263.

IRIDACEÆ.

Cape Saffron. This product, which resembles very much crocus in all but color, is noticed by Prof. Archer. Am. J. Ph., xxxvii. 3, p. 187.

Saffron. Guibourt found a lot of saffron adulterated to the

extent of one half the weight with the stamens of *Crocus vernus* and the petals of *Calendula officinalis*, which had previously been dyed red. Journ. de Pharm. and Chim., 1864. N. Jahrb. Ph., xxii. 344.

ACORACEÆ.

Acorus Calamus as a Preventive of Insect Depredations. Dr. Schultes observes that much use was made by the older naturalist travellers in the East, of the powder of the root of *Acorus calamus* as a preservative against insects, and that he has found it of the highest utility for the protection of herbaria against the ravages of the *Annobium panniceum*. Some of the powder is to be occasionally strewed over the plants, and this insect, beetles, etc., at once desert the spot wherever its smell is perceptible. For the same reason it is a valuable means of preserving zoological collections from insect depredations. Med. Times.

PALMACEÆ.

Sugar. Dr. de Vry states that cane sugar is obtained from the Aren palm, and suggests that it might be made a source of constant and abundant supply. Am. J. Ph., xxxvii. 2, p. 153.

Respiration of Flowers. M. Aug.-Cahours, after a series of experiments, concludes :

1. That all flowers left in a limited atmosphere of normal air consume oxygen, and produce carbonic acid in proportions varying as the flower is scentless or not.

2. That the circumstances under which the phenomenon takes place being identical, the proportion of carbonic acid increases as the temperature is raised.

3. That generally, with flowers from the same plant and of equal weight, the quantity of carbonic acid produced is rather greater when the apparatus in which the experiment is performed is exposed to the light, than when it is in darkness; that the proportion is, nevertheless, sometimes the same under either condition.

4. That when the normal air is replaced by pure oxygen, the differences become much more marked.

5. That buds produce rather more carbonic acid than fully

developed flowers, which is explicable by the greater vitality of the buds.

6. That flowers left in inert gas disengage small quantities of carbonic acid.

7. Finally, the pistil and stamens, which possess the greatest vitality of any part of the flower, consume the greatest quantity of oxygen, and produce the largest proportion of carbonic acid. Am. J. Ph., xxxvii. 1, p. 88. From London Chem. News.

CHEMISTRY.

INORGANIC CHEMISTRY.

1. NON-METALLIC ELEMENTS.

NITROGEN.

Liquefaction of Protoxide of Nitrogen. M. Bianchi has succeeded in the liquefaction of this gas. Am. J. Ph., vol. xxxvii. p. 275.

CARBON.

Carbonic Acid. Prof. H. Wurtz has given an interesting paper with regard to the use of this acid in the manufacture of Mineral and Lithia water. Am. J. Ph. xxxvii. 2, p. 113.

Bisulphuret of Carbon. Mr. L. Thompson has discovered that steam and bisulphuret of carbon cannot exist together at a red heat. He has applied this idea to the purification of coal gas. Am. D. Circ. vol. ix. 107.

Plumbago. Black lead together with nickel are said to have been discovered in large quantities in New Jersey. Am. D. Circ. vol. ix. 3, 51.

PHOSPHORUS.

Phosphates in Medical Decoctions and Infusions. M. Serreil, in some researches made by him, shows that plants contain the phosphates in a soluble form. He states that all vegetable solu-

tions precipitate ammoniaco-magnesian phosphate, when sulphate of magnesia saturated with sal-ammoniac is added, and concludes, from this fact, that the vegetable infusions and decoctions owe a portion of the action they exert on the economy, to the phosphoric acid and phosphates they contain, the phosphate of lime of the bones proceeding from the soluble phosphates. Am. D. Circ.

CHLORINE.

Manufacture of Chlorine. M. de Tregomain has patented a process for the improvement of the manufacture of chlorine by means of bichlorides, and also to the method of revivifying the latter. After the bichloride, which is heated to a deep red, has disengaged about half its chlorine, and has changed to a state of protochloride, he collects it, while in a state of fusion, and pours it on marble slabs, and then grinds it in a mill to a powder. This powder is then introduced into a revivifying apparatus, in which a sufficient quantity of air is introduced; the protochloride coming in contact with the oxygen of the air, becomes changed into an oxychloride. In order to effect the revivification, he places the powdered oxychloride in stone-ware vessels, containing hydrochloric acid at 23° Beaumé, in the proportion of about 1 cwt. of dry oxychloride to 100 lbs. of acid. The matters are then heated, cooled and crystallized, and the mother water drawn off, the crystals being dried and distilled over again.

Perchloric Acid. Mr. C. Bullock gives an account of experiments in the manufacture of this acid, and recommends its preparation from perchlorate of potash. He gives the yield of perchlorate from a pound of chlorate of potash as about eight ounces, and the yield of perchloric acid from one pound of perchlorate at about five ounces. In the same paper he states that the perchlorate of morphia requires 73 parts of water and 44 of alcohol at 60° F. to dissolve it; it is almost insoluble in chloroform. Am. J. Ph., xxxvii. 1, p. 19.

IODINE.

Action of Iodine, Bromine and Chlorine on Sugar. E. Fougères states that these three substances unite with simple syrup,

forming a clear solution, which is unalterable by air, but heat at 100 C. decomposes them. Am. D. Circ.

Iodine. A mineral is said to have been discovered in Chili, consisting of a mixture of iodide of lead, with oxide and chloride of the same metal, containing ten per cent of iodine. Am. D. Circ., vol. ix. 86.

R. Druitt recommends a strong solution of Iodine in methylated spirit as a safe, chief, and efficient disinfectant. The advantage claimed for it are, that it purifies solid surfaces as well as Condry's and Burnett's liquids; and that it is also volatile and acts on the air like chloride of lime without its nauseous odor. Am. D. Circ.

BROMINE.

Bromide of Ammonium. Dr. Coleman recommends this preparation in the treatment of whooping cough, in doses of one grain for each year of the patient's age, three times a day. Cin. Lancet.

Adulteration of Bromide of Potassium. M. C. Umney states, in the Pharm. Journal, that of samples of Bromide of Potassium from five manufacturing chemists of London, but one was found to be pure, the others being contaminated with Iodine. He advises all pharmacutists to test their bromide of potassium before using it, and gives the following method for so doing, viz.: Dissolve some of the salt in water, adding to the solution starch, and subsequently a few drops of chlorine water, when, if any iodide be present, a blue color will be produced. Although the bromine is set free as well as the iodine, still the bromine does not produce a blue color with starch.

SILICON.

Silicates as Antidotes. Henry Ellis, in a letter to the editor of the Chemical News, suggests the soda silicates of magnesia, alumina, and lime in case of any poisonous mineral salt having been taken. An instantaneous precipitation of an insoluble silicate would occur, and probably without any injurious effects to the coats of the stomach, by prompt administration of a diluted solution of any of the above named compound soluble silicates,

or a solution of silicate of soda saturated with gelatinous silica. Am. J. Ph. xxxvi. 5, p. 432.

2. METALLIC ELEMENTS.

(A.) *Metals of the Alkalies and Earths.*

POTASSIUM.

Permanganate of Potash in infecting ulcers, etc. Dr. H. Ploss, of Leipzig, says, this salt disinfects rapidly the most fetid ulcers, used in lotions or injections, in the proportion of two scruples to eight ounces of water. The most favorable method is to cover the wound with lint soaked with that substance, and to place above this a layer of raw cotton, the latter having the property of filtering the air, and retaining the germs which determine putrid fermentation.

The permanganate of potash serves also a very good purpose in freeing the hands from any bad smell contracted during post-mortem examinations.

It is also recommended to correct the odor of decayed teeth, by using two drops of a concentrated solution of the salt in a glass of water as a wash, or a few drops may be introduced into the cavity of the tooth on a small piece of cotton. It is also useful in correcting the bad smell of the feet. Amer. Drug. Circ.

Permanganate of Potash in Gonorrhœa. Dr. John G. Rich, of Beachville, C. W., has employed this remedy in sixty-four cases, with a failure to cure speedily and thoroughly in only two. He begins the treatment with a purgative, and then uses as an injection, three times a day, permanganate of potash, grs. vi. water ʒi. Amer. Drug. Circ.

Sulphocyanide of Potassium. Mr. W. Walter Stoddart, in a paper "On the Sulphate of Quinine," gives the following formula for preparing sulphocyanide of potassium:

Take of Cyanide of potassium, (fused,)

Sublimed sulphur, of each 120 grains.

Distilled water, an ounce and a half.

Boil in a glass flask for fifteen minutes, filter, and make up the quantity to 1½ ounces, with sufficient distilled water.

SODIUM.

Bicarbonate of soda is proposed as a substitute for the ordinary carbonate in preparing hypochlorite of soda. A. J. Pharm. xxxvii. 288.

Carbonate of Soda and Potassa. A double salt, consisting of NaO , KO , C_2O_4 , $12\text{H}_2\text{O}$, was found by Fehling in the mother-liquor of prussiate of potash. The salt is very soluble in water, but cannot be recrystallized without decomposition. It effloresces in the air. Ann. Chem. und Pharm. cxxx. 247.

On double Carbonate of Potassa and Soda. M. Fehling describes a double salt of potassa and soda. It presents itself in the form of rhomboidal efflorescent prisms. It melts in its water of crystallization, which it loses nearly entirely at 212°F . He states the formula as $\text{NaO}, \text{CO}_2 + \text{KO}, \text{CO}_2 + 12\text{H}_2\text{O}$. Am. J. Pharm. xxxvi. 419.

A compound of Glucose and Bromide of Sodium was obtained by Stenhouse by mixing concentrated solutions of two equivalents of glucose and one equivalent bromide of sodium, when, on spontaneous evaporation, rhomboidal crystals were deposited, consisting of $\text{C}_{24}\text{H}_{24}\text{O}_{24} \text{Na Br}$. An attempt to produce a similar compound with bromide of potassium failed. Ann. Chem. und Pharm. cxxx. 286.

RUBIDIUM.

Prof. Bunsen states that this metal may be reduced from the carbonated tartrate of oxide, seventy-five grains of that salt yielding five grains of pure metal. Amer. Drug. Circ. ix. 90.

THALLIUM.

Thallium, quantitative analysis of. For this purpose Werther adds to a moderately-concentrated hot solution of a salt of thallium in aq. ammonia a solution of iodide of potassium, when iodide of thallium is precipitated in a compact form, resembling chloride of silver, and is easily separated by filtration. The iodide from which the thallium is estimated has the composition TlI , and is permanent in the air at ordinary temperatures. It is very sparingly soluble in water, rather more so in acidu-

lated water, or water containing fixed alkalies in solution, but insoluble in the various saline solutions and in alcohol of 92°; also nearly so in concentrated solution of ammonia. Zeitschr. f. Analyt. Chem., 1864.

BARIUM.

Chloride of Barium. According to Godin, a process lately patented in Belgium for preparing this salt consists in melting together a mixture of sulphate of baryta, charcoal, limestone, and chloride of calcium. During the operation, the charcoal reduces the sulphate of baryta to sulphide of barium, and this forms, with chloride of calcium by double decomposition, chloride of barium and sulphide of calcium; this latter again combines with the lime produced by the decomposition of some of the limestone, forming an insoluble oxysulphuret of calcium. The chloride of barium is now separated from the calcined mass by lixiviation and evaporation. The proportions used are 100 parts native sulphate of baryta, 35 to 50 parts charcoal, 15 to 25 parts limestone, and 40 to 60 parts chloride of calcium. Dingl. Polyt. Journ. clxxi. 316. N. Jahrb. Pharm. xxii. 337.

CALCIUM.

Biemer recommends inhalations of limewater in croup and diphtheria. N. Jahrb. Pharm. xxii.

MAGNESIUM.

Citrate of Magnesia. M. Parisel recommends the following method of preparing this article, which he has followed during two years, as being both simple and effectual:

. Take of powdered and well-dried citric acid 200 grammes, carbonate of magnesia 120 grammes, mix accurately and inclose the powder in a slightly-warmed and well-dried bottle, which must be kept well stopped. The mixture thus made is rapidly dissolved in three times its weight of water at the ordinary temperature; and, if the water be pure, the solution in a few minutes becomes perfectly transparent, without any precipitate. The salt preserves its solubility for a long time. Am. Drug. Circ.

ALUMINIUM.

Aluminium. It is announced that M. Cortelli has discovered a method of extracting aluminium from clay, more simple and economical than any of the processes hitherto employed. Am. Drug. Circ. ix. 7.

Aluminium. M. Basset has succeeded in reducing aluminium from its chloride by means of zinc. This, it is hoped, will greatly reduce the price of the metal. Am. Drug. Circ. ix. 106.

Aluminium, behaviour towards certain chlorides. According to Boettger, aluminium foil may be triturated with dry chloride of mercury without entering into chemical combination, but when to a mixture of three parts of chloride of mercury to one part of aluminium a few drops of water be added, an amalgam is at once formed with considerable elevation of temperature. When aluminium is brought in contact with solution of chloride platinum, the latter is at once decomposed with a sudden evolution of hydrogen gas and formation of chloride of aluminium and precipitation of platinum black. When brought in contact with chloride of gold, finely-divided metallic gold is thrown down. N. Jahrb. Pharm. xxii. 139.

YTTRIUM.

Yttria. Experiments made by Popp with large quantities of yttria proved that the elementary bodies, erbium and terbium, which had only been found associated with yttria, do not exist at all, but that the substances so named were nothing more than yttria contaminated with lime and metallic oxides, thus changing its properties. The combining number of yttrium was found to be 34. In its pure state it is a black infusible powder, having a metallic lustre, and burning brilliantly when heated, forming yttria. The crystallized salts of yttria are of a light-rose color, having a strongly astringent taste, and are decomposed by ammonia, yttria being precipitated. In the spectroscope the salts of yttria show five dark lines, resembling those produced by the salts of didymium. The sulphate crystallizes with difficulty, being separated in its anhydrous state during evaporation. The acetate crystallizes easily with two atoms of water. The

chloride crystallizes in deliquescent rhombic tables. The fluoride is gelatinous and insoluble. Ann. Chem. und Pharm. cxxxi. 179. N. Jahrb. Pharm. xxii. 338.

(B.) *Heavy Metals.*

CHROMIUM.

Chromate of Potash and Ammonia.—M. E. Kopp announces the discovery of a new chromic salt—the double chromate of potash and ammonia—which promises, from the facility with which it decomposes under the action of light, to be of the greatest service in photography. The salt is easily made. Strong liquid ammonia is poured on pure bichromate of potash until the whole of the ammonia, by the second equivalent of chromic acid, is neutralized. A slight excess of the alkali is then added, and the whole is heated and set aside to crystallize under a bell jar, beneath which a few drops of liquid ammonia have been spread. The sensitive surface is prepared in the dark, and is of a light orange color. Exposure to light turns it to a dark brown. To fix the image, it is only necessary to wash the print in some clear water, to which a few drops of hydrochloric acid have been added. M. Kopp regards the image as composed of the chromate of chromium, $\text{CrO}_2 = \text{Cr}_2\text{O}_3 = \text{Cr}_2\text{O}_5, \text{CrO}_3$. According to him, therefore, we may change the color of the print by acting either on the chromic acid or the base. Am. D. Circ.

IRON.

Burning of Iron in Compressed Oxygen.—Frankland has observed that iron will burn under a pressure of about 25 atmospheres in oxygen, as freely as wood in atmospheric air. Ann. Ch. Pharm. cxxx. 359.

Iron by Hydrogen.—G. Oberlander found the commercial iron by hydrogen largely adulterated with black ferrosferrie oxide, and recommends the following easy method of estimating the extent of the adulteration. A given weight of the suspected article is carefully dried on a water bath to free it from adhering water, and the loss noted. A graduated solution of

sodium is then gradually added with constant stirring, until the yellowish brown color of the tincture of Iodine no longer disappears, or until a drop of the mixture, after standing a little while, gives the characteristic blue discoloration on starch paper. The undissolved portion is then separated by filtration, washed with alcohol, dried, and weighed. In the specimen thus examined by the author, the insoluble portion, which was afterwards determined to be black ferrosiferrous oxide of iron with traces of sulphide, amounted to nine-tenths of the whole; or in a thousand, 50 of water, 50 of metallic iron, and 900 of ferrosiferrous oxide with traces of sulphide of iron. N. Jahrb. Ph. xxii. 133.

Perchloride of Iron in Croup.—Several cases have been reported in a French journal, in which croup was successfully treated with a mixture of perchloride of iron, in the proportion of fifteen drops in four ounces of water, given in table-spoonful doses, every five or ten minutes. The effect is to detach the false membrane, which is expelled by coughing. The remedy can scarcely be called a specific, as there were several failures, but anything promising to afford relief should be known in so dangerous a disease. Am. D. Circ.

Iron Rust.—Quick-lime, it is said, will prevent the surface of polished iron or steel from becoming tarnished or rusted; it is only necessary to place a package of the lime near the metal to be protected. Am. D. Circ. ix. 350.

MANGANIUM.

Permanganate of Potash, in solutions, spread upon pear or cherry wood for a few minutes, leaves a permanent dark brown color, which, after washing, drying, and oiling, assumes a reddish tint upon being polished. Am. D. Circ.

(See, also, *Compounds of Potassium.*)

LEAD.

Sulphide of Lead, it is stated, can be advantageously used as a decolorizer in the preparation of Tartaric Acid. Am. D. Circ. ix. 67.

NICKEL.

Test for Nickel.—When a solution of a salt of nickel is mixed

with acetate of soda, then hypochlorate of soda added, and the mixture heated to the boiling point, a dark blue precipitate of peroxide of nickel, soluble in nitric acid, is thrown down and deposited on the sides of the test tube. The reaction is a very delicate one. Ann. Ch. Pharm. cxxxi. 363. N. Jahrb. Ph. xxii. 338.

COBALT.

Cobaltic Acid.—Mr. Winkler seems to have proved the existence of cobaltic acid; composition CoO_3 . Am. J. Ph. xxxvii. 3, p. 228.

BISMUTH.

Bismuth.—Mr. N. G. Bartlett gives formulas for the following preparations of bismuth, viz.:

Citrate of Bismuth.—

Take of Subcarbonate of Bismuth a troyounce;
Citrate of Potassa, a troyounce and 120 grains;
Nitric Acid, a troyounce and a half;
Distilled Water, a sufficient quantity.

Dissolve the subcarbonate of bismuth in the nitric acid, and, when effervescence has ceased, dilute the solution with a fluid-ounce and a half of distilled water, gradually added. Dissolve the citrate of potassa in two pints of distilled water, and to this liquid add slowly, with constant stirring, the acid solution of bismuth. Permit the mixture to stand for several hours; then pour it on a moistened paper, filter, and, when the liquid has nearly ceased to pass, cover the surface of the precipitate with distilled water. Repeat this operation until the washings no longer contain nitric acid. Allow the magma to drain, and dry it on bibulous paper, with a gentle heat.

Citrate of Bismuth and Ammonia.

Take of Citrate of Bismuth in a convenient quantity;
Stronger Water of Ammonia;
Distilled Water, each a sufficient quantity.

Rub the citrate of bismuth with sufficient distilled water to reduce it to an uniform pasty consistence, and add cautiously, with constant trituration, stronger water of ammonia, until a

solution is obtained, observing to avoid an excess of ammonia. Filter the liquid through paper, returning the first portions that pass, should they be turbid. Spread the clear solution on glass, that the salt may dry in scales.

Liquor Bismuthi et Ammoniaë Citratis.

Take of Citrate of Bismuth and Ammonia 260 grains;

Alcohol two fluidounces;

Distilled Water, fourteen fluidounces;

Water of Ammonia, a sufficient quantity.

Dissolve the citrate of bismuth and ammonia in the distilled water, neutralize the liquid with water of ammonia, and mix it with the alcohol. *Am. J. Ph.* xxxvii. 1, p. 1.

ANTIMONY.

Test for Tartar Emetic.—The solution of perchloride of iron produces a peculiar reaction with not too strongly acid solutions of Tartar emetic. This distinguishes it from all other salts of antimony. *Am. J. Ph.* xxxvii. 1, p. 82.

ARSENICUM.

Arsenious Acid.—Helwig recommends the employment of the microscope in toxicology. With one of 250 diameters, he was enabled to detect the minutest quantities of arsenious acid, which appeared in beautiful characteristic octohedrons; he states that the one-thousandth part of a grain will yield several hundreds of these microscopic crystals. He was equally successful in his experiments with a number of alkaloids and neutral vegetable principles. *Zeits. An. Ch.*, 1864. *N. Jahrb. Ph.* xxii.

TELLURIUM.

Tellurium.—This very rare metal has been discovered in Bolivia, in an ore of bismuth, which is said to contain 5 per cent. of tellurium. *Am. D. Circ.* ix. 90.

MERCURY.

Quicksilver. The eminent naturalist Priestly, suggests a simple method for purifying mercury, by shaking it strongly in

an iron flask, and renewing the air in the same repeatedly with a pair of bellows. By this means, a black powder will be formed on the surface, which is easily separated. The quicksilver may be considered pure when no more of this dust is formed. In this state it will always give a clear sound when agitated in the flask, while an admixture of lead will make it sound dull, as if it were in a vessel of potter's clay. It is often found in the market adulterated with lead, tin, &c. It can absorb or dissolve one half of its weight of lead without much affecting its limpidity. The pure metal rubbed on the palm leaves no mark; if it is adulterated it soils the skin. Am. D. Circ. ix. 3, 50.

GOLD.

Gold Test. A good test for gold or silver is a piece of lunar caustic, fixed with a pointed piece of wood. Slightly wet the metal to be tested, and rub it gently with the caustic. If gold or silver, the mark will be faint, but if an inferior metal, it will be quite black. Jewellers who purchase old gold often use this test. Am. D. Circ.

ORGANIC CHEMISTRY.

ALCOHOL AND DERIVATIVES.

Preservation of Chloroform. Chloroform on being exposed to the sun's rays, in a very short time undergoes decomposition, hydrochloric acid being developed, and a strong odor of chlorine being present. To prevent this the chloroform should be kept in the dark. M. Boettger finds that even afterwards it may be purified by agitating it with a little caustic soda. So long as it is in contact with caustic soda it may be preserved for an indefinite period in diffused light. Am. D. Circ.

Test for Methylic Alcohol in Ethylic Alcohol. Mr. John Tuck, in a paper read before the British Pharmaceutical Conference, states, that an alkaline solution of the double iodide of potassium and mercury acts as a test for the presence of methylic alcohol. On boiling a few drops of this with pure spirit of wine a yellowish-white precipitate is formed, which is wanting, should methylic

alcohol be present. He found that acetone was the principle which prevented the formation of a precipitate by methylated spirit. *Am. J. Ph.* xxxvi. 6, p. 531.

For Estimating Sulphuric Ether. MM. Regnault and Adrian give a process for estimating the purity of sulphuric ether, by determining its density before, and after the action of dry carbonate of potash. *Am. J. Ph.* xxxvi. 6, p. 528.

Heavy Oil of Wine. Prof. J. M. Maisch in a paper on the preparation of this oil, in which he gives a lengthy tabular statement of results from the experiments of Mr. Diehl says, that the largest yield of oil is always obtained when the temperature is steadily kept between 302° and 315 F.

ORGANIC ACIDS.

Benzoic Acid. MM. P. and E. Depouilly convert phtalic acid into benzoic acid by first converting the phtalic acid into a salt of lime, &c. *Am. J. Ph.* xxxvii. p. 271.

New Organic Acids. Kammerer and Carius obtained *Sulphobenzoic acid* $H_3 C_{14} S_2 O_{10}$ by heating together dry sulphate of silver and chloride of benzyl. The result was a very hard mass consisting of chloride of silver and the new anhydrous acid.

Sulphoacetic Acid. $H_3 C_4 O_3, 2SO_3 + HO$, was obtained in a similar manner by heating together in a closed glass tube, Chloride of Acetyl, Sulphate Silver and Powdered glass, and *Sulphosuccinic acid*, $2(H_2 C_4 O_3) + 2SO_3 + 2HO$, by an analogous process, forming a deliquescent crystalline mass. *Ann. Ch. und Pharm.* cxxxi. 153. *N. Jahrb. Ph.* xxii. 339.

Phenic Acid a remedy for Stings. Phenic acid is said to be an excellent antidote for the sting of the bee or wasp. This acid applied to the place will stop the inflammation and take away all pain. *Am. D. Circ.*

CARBOHYDRIDES.

Benzine as an Insecticide. A mixture of 10 parts of benzine, 5 parts of soap and 85 of water, has been very successfully applied against the parasites which infest dogs. Made of this

strength it is found to answer better than when used pure. *Am. J. Ph.* xxxvi. 5, p. 421.

Caoutchouc in Dentistry. Prof. E. Wildman states that in the manufacture of Hard Rubber, there is so much earthy matter and metallic oxide added as to render it unfit for dental purposes; that he has found in *all* samples of the English pink rubber forty eight per cent of earthy matter.

Carbolic Acid. Mr. E. Davis in a paper read before the Liverpool Chemists' Association, states that this acid as now obtained in a pure state, is a colorless crystalline solid body, possessing most extraordinary antiseptic properties. One part of this substance added to five hundred parts of glue or flour paste will keep them perfectly sweet for years. Hides steeped in a watery solution of it and then dried in the sun are kept from emitting any unpleasant odor even after long voyages. Extracts of coloring matters, especially those containing tannin, are also preserved unchanged by the addition of a very small quantity of this acid. In medicine, carbolic acid has also been used most successfully in the treatment of skin diseases, ulcers, sloughing wounds, toothache, and internally for dyspepsia. In veterinary practice it has been found to be specific for foot-rot in sheep, and has proved very effectual in curing grease and canker in horses. Various dyes are obtained from carbolic acid; they are called picric or carbazotic acid, peonine, azuline and aurine. The last named is a new dye for silk, producing a splendid orange color. The paper concluded with showing how manufactures and science had mutually benefitted by their alliance in this, as in many other instances.

Nitro-benzole. M. Dragendorff proposes sodium as a means of detecting the presence of nitro-benzole in the oil of bitter almonds. This metal in contact with pure oil of bitter almonds disengages gas, which is augmented by the addition of alcohol. Nitro-benzole under the same circumstances with alcohol becomes deep brown or black and viscid. *Am. J. Ph.* xxxvi. v. p. 419.

Paraffine.—Paraffine possesses certain properties which render it useful in the laboratory. It may be advantageously substituted for oil in baths, as it endures a high temperature with

out evaporating or emitting any unpleasant odor. Filtering paper, after being soaked in it, may be kept several weeks in concentrated sulphuric acid without undergoing the slightest alteration. From this property of paraffine, it may be advantageously applied as a coating to labels on bottles containing strong acids; fluoric acid, even, does not act upon it, except it be heated. Fruits coated with it retain their freshness for months. *Am. D. Circ.*

Solubility of Paraffine.—Aug. Vogel has determined the solubility of paraffine in benzol, chloroform, and sulphide of carbon. The paraffine experimented with melted at 48° C., and congealed at 45° . The benzol had the specific gravity 0.887. One part of benzol

At 46° C. dissolved 7.7 parts paraffine.

43°	"	5.0	"
39°	"	4.0	"
23°	"	0.7	"
20°	"	0.3	"

Solubility in Chloroform.—One part of chloroform at 23° dissolved 0.22 parts paraffine. One part of chloroform at 20° dissolved 0.16.

Solubility in Sulphide of Carbon.—One part of the sulphide of carbon at 23° dissolved an equal weight of paraffine.

Comparative experiments with stearic acid showed that one part of benzol at 23° C. dissolved 0.22 parts of stearic acid; and one part of sulphide of carbon at 23° dissolved 0.3 of stearic acid. This acid is, consequently, less soluble in the above menstrua than paraffine. A mixture of stearic acid and paraffine, fused together, did not separate from these solutions in a homogeneous mass, but in two layers, the stearic acid appearing in distinct crystals. This may suggest a method of recognizing the presence of stearic acid in a mixture with paraffine. *Am. D. Circ.*

Petroleum.—Several fine colors are said to be produced from the residuum of petroleum. *Am. D. Circ.* ix. 5, 85.

Petroleum.—Large quantities of petroleum have been discovered in California and Nevada, flowing spontaneously through the surface of the earth. *Am. D. Circ.* ix. 3, 51.

Preservative Properties of Coal Tar.—M. Rottier presented a paper before the Royal Academy of Belgium, upon the preservation of wood by the heavy oil of coal tar, in which he states that, after reviewing the number of compounds this complex product contains, he finds that the volatile hydrocarbons aniline, phenic acid, and naphthaline do not possess any preservative properties; but that a green oil, which is produced in the distillation of coal tar at a temperature of 572° F., alone resists the decay of wood. Am. D. Circ.

ALKALOIDS.

Aniline Black.—M. Lauth gives a process for preparing this new coloring matter. It is said to produce a very brilliant black. Am. D. Circ. ix. 5, 85.

Aniline.—Lehmann detected the presence of aniline in a specimen of aqua ammoniæ (which is now generally obtained from gas liquor), by slowly supersaturating with nitric acid, avoiding all increase of temperature, when a rose-colored solution was obtained, owing its color to aniline. Arch. Ph. 159, 239. N. Jahrb. Ph. xxii. 268.

Sulphate of Atropia is sometimes found in commerce as an amorphous, resinous, or gummy substance. If it be desired to reduce it to crystals, it must be dissolved in the smallest possible quantity of absolute alcohol (100 per cent.), and left to spontaneous evaporation at the ordinary temperature; instead of pure alcohol, anhydrous acetic ether may be employed. Am. D. Circ.

On the Amount of Alkaloid in Commercial Citrate of Iron and Quinia.—Mr. J. C. Braithwaite had examined fifteen samples of this medicine, which should contain 16 per cent. of quinia, or about 25 per cent. of citrate of quinia. The following is a tabular form of his results:

		In 100 parts.	
		Quinine.	Citrate of Quinine.
1	. . . . .	1.5	2.3
2	. . . . .	1.5	2.3
3	. . . . .	3.7	5.8
4	. . . . .	4.1	6.4
5	. . . . .	4.7	7.4
6	. . . . .	6.0	9.3.

		In 100 parts.	
		Quinine.	Citrate of Quinine.
7	.	7.3	11.5
8	.	9.3	14.5
9	.	11.2	17.5
10	.	12.2	19.1
11	.	13.0	20.2
12	.	14.7	23.0
13	.	14.8	23.1
14	.	14.9	23.2
15	.	15.8	24.7

—Ch. N.

Test for Muriate of Cinchonia.—An admixture of 20 per cent. of muriate of cinchonia in sulphate of quinia is readily detected by heating a few grains of the suspected article carefully on a platinum foil. Muriate of cinchonia, muriate of quinia, and quinidia fuse, and give off, if ignition is avoided, purple fumes, like the vapor of iodine. The sulphates of the cinchona alkaloids, and the alkaloids themselves, do not give this reaction. Am. D. Circ.

Calabar Bean.—Prof. F. F. Mayer gives a process for making the alkaloid of this bean. Am. J. Ph. xxxvii. 173.

MM. A. Ver and M. Leven, also, are quoted with regard to éserine. Am. J. Ph. xxxvii. 204.

Camphorate of Quinia.—Dr. V. F. Marletta suggests this preparation as a substitute for valerianate of quinia. It may be prepared by saturating an alcoholic solution of camphoric acid with pure quinia, to perfect neutralization. It may be also prepared by double decomposition between an alcoholic solution of camphorate of lime or potassa, and a solution of neutral sulphate of quinia. Am. J. Ph. xxxvii. 254.

Comparative Value of Narcotic Extracts and Alkaloids.—Alois Jandous, in a paper read before the General Society of Austrian Apothecaries, states that an extract of belladonna, prepared from the coagulated juice—the former of which had been prepared a year before, yielding $2\frac{1}{2}$ per cent.—yielded 3 per cent. of atropia. Extract of hyoscyamus, prepared from the fresh flowering herb, yielding two and six-tenths of extract, yielded forty-six-hundredths of hyoscyamia. Extract of conium

from the flowering herb, yielding three nine-tenths per cent., gave three per cent. of pure conia. Am. J. Ph.

Hydrastia. This substance was obtained by Mahla by treating berberina with chlorhydric acid, precipitating the solution with an excess of ammonia, pressing the precipitate and dissolving in boiling alcohol, when, on cooling, the hydrastia was deposited in crystals of the composition $C_{44}H_{14}NO_{12}$. Journ. pract. Chem. cxxxi. 248. N. Jahrb. Pharm. xxii.

The salts of Morphia. Dr. Garrod, in the British Med. Times and Gazette, states, as the result of experiments, that he was unable to trace the slightest difference in the effects of the acetate, hydro-chlorate, sulphate, meconate, tartrate, and phosphate of morphia. In no one instance could the patient tell which salt was administered, or find any difference in the operation of the medicines.

Propylamin. Dr. Cummings states, that cod-liver oil is a reliable source from which to obtain propylamin. Am. Drug. Circ. ix. 86.

Ricinine. Prof. Tuson has obtained an alkaloid from castor beans, which he terms ricinine; it crystallizes in rectangular prisms and tables. The best solvents are water, alcohol and benzole. Ether dissolves it but sparingly. It does not possess the purgative properties of the oil. Am. J. Ph. xxxvi. 488.

Sublimation of alkaloids. Dr. Helwig, of Mayence, has published his researches on microscopic tests applicable for diagnosis. Among these he describes the sublimation of nearly all medicinal alkaloids, which, he states, when properly treated, furnished perfect objects for micro-chemical examinations. Most of the sublimates are stated to be crystalline. Am. J. Ph. xxxvii. 1, 29.

Theine in the Kola-nut. At a meeting of the Pharm. Soc. of London, Prof. Bentley stated that Dr. Daniel had discovered theine in the kola-nut,—the fruit of the *Sterculia acuminata*,—an article much used as food by the natives of Central Africa. As the plant belongs to the same order as the cocoa, or to an order closely allied to it, Dr. Daniel thinks the substance may be theobromine; but Dr. Attfield exhibited some of it, which

he had extracted from nuts sent by Dr. Daniel, and the crystals so exactly resembled those of theine from tea, that he concluded it could not be theobromine. *Am. Drug. Circ.* ix. 3, 51. *Am. J. Ph.* xxxvii. 205.

Iodide of Ammonium is prepared by Beyer by dissolving 27½ parts of iodide potassium in 48 parts of distilled water and 22 parts of tartaric acid, also in 48 parts of water, mixing the solutions and exposing the whole to a freezing mixture, whereby bitartrate of potassa is separated. The filtered solution of hydriodic acid is then saturated with carbonate of ammonia and the solution evaporated to dryness on a water bath. *Pharm. Zeitschr. f. Russland*, 1863, 302. *N. Jahrb. Pharm.* xxii, 139.

Valerianate of Ammonia. The new French Codex gives the following process for its preparation: A mixture of caustic lime and muriate of ammonia, and immediately above it in a dish, some pure valerianic acid are placed together under a bell-jar, when, in the course of a few days, the acid is converted into white crystals of valerianate of ammonia.

VOLATILE OILS.

On the Extraction and Preservation of Aromata. Chas. R. C. Tichborne, F. C. S., etc., in a paper read at the Bath Pharmaceutical Conf., speaks of glycerine as a means of preserving vegetable tissue and the aroma of plants. Also as a means of extracting the perfume of delicate plants, he considers macerating the plants in glycerine as superior to the use of fatty substances. *Am. J. Ph.* xxxvii. 1, 47.

CARBOHYDRATES.

- *Starch Sugar* has been converted into a sweet, hard, granular condition, in which it resembles ordinary sugars, by Mr. F. Anthon. He first treats the starch with sulphuric acid in the usual manner. The neutralized solution is then evaporated in a wooden vessel, allowed to rest and to solidify gradually. The mass of raw sugar is then removed and strongly pressed in cloth, the syrup which is pressed out being reserved and boiled down in a fresh operation. After pressing, the sugar is melted

and further concentrated in a water bath until the liquor reaches 34° or 35° Baumé. When this point is arrived at, the melted sugar is allowed to cool, with an occasional stirring. If it is desired to obtain the sugar in small granules, the stirring is continued. When this mass has cooled to 25° or 30° Baumé, it is removed and dried in a gently heated drying room. *Am. Drug. Circ.*

Effects of Sugar on Teeth. Drs. Paolo, Montegazza, and Labus, of the University of Pavia, have recently undertaken a series of experiments to settle the question of the effects of sugar on the teeth. The conclusions to which these investigators have come, are, 1st. That sugar (as sugar) does not exercise any chemical action on the teeth, and that it does not predispose to caries; 2d. That sugar only affects the teeth when it has undergone the acetic or lactic fermentation. *Am. Drug. Circ.*

COLORING MATTERS.

Method of preserving the Coloring Matter of Litmus. Dr. Vogel presents the following for this purpose: Take 16 grammes of commercial litmus, reduce it to a fine powder and put it into a cylindrical glass phial, with 120 cubic centimetres of cold distilled water, and leave for twenty-four hours, taking care to stir occasionally. As the first portion of the liquid extract will contain all the free alkali of the litmus, it should be set aside, and on the residue should be poured a fresh quantity of 120 cubic centimetres of distilled water; it should then be left for twenty-four hours, and shaken at intervals. Then decant a second time and divide the liquor into two equal parts, and stir one part with a glass tube dipped in dilute nitric acid, repeating the addition of this acid by means of the tube, until the liquid becomes perfectly red. Then mix it with the other portion that has remained blue. The result is a reddish-blue liquid. A litmus dye is thus obtained as neutral as possible, which must then be evaporated in a porcelain capsule, placed in a sand bath, and kept below the boiling-point. There remains a granular amorphous mass, which must be kept in a well-stoppered bottle. This matter dissolves in water, leaving no residue, and gives a lighter or

darker hue, according to the quantity of water used, and has the advantage of furnishing a litmus dye at a moment's notice and at any degree of concentration which may be required. If, for instance, it is desired to experiment with a standard solution, a piece of the above extract, about the size of a pin's head, put in a wine glass containing a little water, will yield a very convenient solution. This extract may be preserved in closed vessels for years, without losing either its solubility or its blue color. Chem. News.

Action of Reagents on the Carminates. Mr. M. C. Luckow gives a series of experiments with the carminates, showing their behaviour with certain salts. Am. J. Ph. xxxvii. 276.

FERMENTS.

Fermentations and Ferments. M. Lemaire finds the same microscopic beings present, whether sugar is being changed into alcohol, or alcohol into acetic acid. In natural animal and vegetable matters he is convinced that microzoa begin the decomposition, which, when the matters become acid is carried on by microphytes. By means of a little acid, these latter are made to appear at will, from which Mr. L. concludes that mycoderms do not make the acid, but appear in consequence of its presence. The acidity of the perspiration it is thought may cause the development of certain microphytes which are observed in some obstinate cutaneous affections. Dub. Med. Press.

PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY.

New Anæsthetics. Dr. Genges has addressed a note to the French Academy, giving an account of some interesting experiments in trying new agents for diminishing sensibility. He has ascertained that a purified kerosoline obtained from common petroleum, when vaporized by heat, will be found a most valuable anæsthetic. He especially commends, as safer than chloroform, bromhydric ether, which is less inflammable, and possesses an agreeable odor.

Therapeutic effects of the Iodide of Sodium. Professor Gross

suggests this remedy in a measure, as a substitute for the Iodide of Potassium in the venereal wards of the Philadelphia Hospital, Blockley. It was given in doses of from six to ten grains, and usually combined with from one-tenth to one-sixteenth of a grain of bichloride of mercury. When given alone the following prescription is preferred :

R. Sodii Iodidi ʒi. Aquæ Cinnamomi fʒi. ℥. Of this about twenty five drops equal six grains of the iodide of sodium.

J. J. BLACK, M. D., Blockley Hospital.

—Hays' Journ., July, 1865.

Cholepyrrhin. Researches on the chemical nature of this coloring matter of bile are published by Maly in Ann. Ch. Pharm. cxxxii. 127.

Dietetical Properties of Phosphorus. By Dr. J. H. Griscom of New York. A detailed exposition is given of the extent and amount of this substance found in the tissues, fluids, secretions, &c., of the body. The practical application was made of the influence of a deficiency of Phosphorus in a variety of diseases of the osseous, nervous, muscular, digestive and respiratory organs. Scurvy, resulting from the two frequent use of salted food was shown to be probably due to the loss of phosphates, which Liebig has proved to be removed by the salt, and is found in the brine. Fresh meat as well as fresh vegetables proves to be an antiscorbutic, doubtless in both cases on account of the phosphoric acid. It was shown that the modern mode of preparing certain foods, deprived them of this element to a large extent. The wheat grains by the bolting process loses 1400 per cent. of this element. Several specimens of roasted wheat as extensively used in South America were shown and highly commended as a substitute for superfine flour, as they contain all the phosphatic matter of the grain. Am. D. Circ.

The St. Louis Medical and Surgical Journal relates a case of poisoning from inhalation of Arseniuretted Hydrogen, which proved fatal after 4 days illness.

Quinine in Scarlet Fever. Dr. F. L. Wright, of Ohio, recommends quinine as a potent medicine in Scarlatina. To a child of five years of age he gives one grain of quinine in combination with two grains of chlorate of potash. Am. D. Circ. ix. 107.

Nitrate of Silver in Nervous Headache. Dr. Socquet (Paris) considers nitrate of silver an infallible specific for nervous headache. His formula for a pill is, Nitrate of Silver 3 centigrammes; Sal Ammoniac 6 centigrammes; Extract of Gentian q. s. Two or three of these pills may be taken in the course of twenty four hours, viz: in the morning fasting, in the middle of the day, and before going to bed. Nervous headaches which had lasted for years have been thus cured in the course of three or four days. Three or four of these pills will remove the headache which accompanies the milk fever, and sometimes lasts as long as twenty days. Med. and Surg. Rep.

ANALYTICAL CHEMISTRY.

The St. Regis Sulphur Water of N. Y. Prof. F. F. Mayer has examined and presented the following as an analysis of this water, viz:

Chloride of Sodium,	79.692 grains.
Chloride of Potassium,	0.508 "
Chloride of Magnesium,	29.927 "
Bromide of Magnesium,	9.673 "
Bicarbonate of Lime,	4.852 "
Bicarbonate of Iron,	0.488 "
Sulphate of Lime,	60.931 "
Sulphate of Soda,	3.501 "
Phosphate of Soda,	1.320 "
Hyposulphite of Soda,	4.205 "
Sulphuret of Sodium,	1.405 "
Silicate of Soda and organic compounds,	11.176 "
Sulphuretted Hydrogen,	22.373 c. c.

—Am. J. Ph. xxxvii. 3, p. 168.

Determination of water in Organic Substances. M. A. Winckler determines the amount of water in organic substances by the change of color which anhydrous chloride of cobalt undergoes in absorbing water. Am. J. Ph. xxxvi. 6, p. 536.

Dialysis. M. Grandean in a recent communication to the Academy of Sciences, gives an account of the experiments which he has made with Mr. Graham's mode of analysing by dialysis, and states that, aided by this, even the minutest portion of morphia, bromine or digitaline cannot in future escape the researches of the toxicologist. Am. D. Circ.

MISCELLANEOUS.

Treatment of Acne.—In acne rosacea and acne simplex, the acid solution of iron—made by dissolving three ounces of epsom salts, and two drachms of sulphate of iron, in half an ounce of dilute sulphuric acid, and a pint of infusion of quassia—given in half ounce doses, is said to be very efficacious. In the tubercular form of acne, Mr. Starlin, in the London Hospital for Skin Diseases, prefers the iodide of iron. In almost all cases, the red lotion—viz., two scruples of the bichloride of mercury, one of the bisulphuret, and ten minims of creosote, in a pint of water—is directed to be used. Am. D. Circ., Aug., 1864.

Cement for Rooms.—An invention by M. Sorel, of Paris, is stated to be superior to plaster-of-Paris for coating the walls of rooms. It is used as follows:—A coat of oxide of zinc, mixed with size, made up like a wash, is first laid on the wall, ceiling, or wainscot, and over that a coat of chloride of zinc applied, being prepared in the same way as the first wash. The oxide and chloride effect an immediate combination, and form a kind of cement, smooth and polished as glass, and possessing the advantages of oil paint, without its disadvantages of smell. Dublin Med. Press.

Chrome Green.—A brilliant green pigment is said to be made by taking fifteen parts of bicarb. potash, thirty-six parts of crystallized phosphate of soda, and six parts of tartaric acid. Fuse the phosphate in its water of crystallization, and add to it the bicarb. potash, rubbed to a fine powder, and afterward the tartaric acid. Upon the last addition, frothing takes place, and the mass changes from a yellow to a green. A porous brown mass remains, is soluble in hot water and dilute acids, giving an emerald green solution. This porous mass is to be moistened with as much strong hydrochloric acid as it will absorb; it is then treated with cold water, to remove the acid, and afterwards with boiling water, to dissolve the salts of potash and soda. An insoluble green body remains on the filter. The six parts of tartaric acid may be replaced by fourteen parts of Rochelle salt, Am. D. Circ.

Cooking Without Fire.—For this purpose, M. Babinet, of the French Institute, gives the following recipe:—Place your food in a black pot, cover it with a pane of glass, and stand it in the sun. The water soon boils, and the food is said to be of better flavor than if cooked in the ordinary way.

Emery.—Large beds of this valuable substance have been discovered in Chester, Hampden County, State of Massachusetts. Am. J. Ph. xxxvii. 277.

Glue for Ready Use.—To any quantity of glue, use whisky instead of water; put both together in a bottle, cork it tight, and set it away for three or four days, when it will be fit for use without the application of heat. Glue, thus prepared, will keep for years, and is, at all times, fit for use, except in very cold weather, when it should be set in warm water, before using. To obviate the difficulty of the stopper getting tight by the glue drying in the mouth of the vessel, use a tin vessel with the cover fitted close to the outside, to prevent the escape of the spirit by evaporation. A strong solution of isinglass, made in the same manner, is an excellent cement for leather. Am. D. Circ. Farm. and Mechan.

Matches Free from Phosphorus.—Hierpe gives the following receipts for a composition for the heads of matches, and for an igniting surface.

For the heads of matches—

Take Chlorate of Potash,	4 to 6 parts.
Bichromate of Potash,	2 “
Ferric Oxide	2 “
Strong Glue	3 “

Oxide of iron may be replaced by oxide of lead or of manganese. The above preparation requires—to produce ignition—the following specially prepared surface on the boxes:—

Take of Sulphide of Antimony,	20	parts.
Bichromate of Potash,	2 to 4	“
Oxide of Iron, Lead, or Manganese,	4 to 6	“
Glass Powder,	2	“
Strong Glue or Gum,	2 to 3	“

Lond. Chem. News. Am. J. Ph. xxxvii. 1, p. 72.

Soup for Children.—Baron Liebig recommends the following as a soup for children :—Half an ounce of wheaten flour, and an equal quantity of malt flour, seven grains and a quarter of bicarb. of potash, and one ounce of water, are to be well mixed; five ounces of cow's milk are then to be added, and the whole put on a gentle fire; when the mixture begins to thicken, it is removed from the fire, stirred during five minutes, heated and stirred again, till it becomes quite fluid, and finally made to boil. After the separation of the bran by a sieve, it is ready for use. By boiling it for a few minutes, it loses all taste of the flour. Am. D. Circ. ix. 71. Am. J. Ph. xxxvii. 262.

Stains on Silk.—To restore the violet color to silk, which has been extracted by acid juice, brush the portions of fabric with tincture of iodine, then, after a few seconds, well saturate the spot with a solution of hyposulphite of soda, and dry gradually, when the color will be perfectly restored. Am. D. Circ.

To Stain Wood to Resemble Mahogany.—Take one gallon of water; eight ounces of madder; four ounces of fustic. Boil, and brush on while hot, and, before it dries, streak with black, to vary the grain. This imitates Honduras mahogany.

Substitutes for Indian Ink. A substance of much the same nature and applicable to the same purposes as Indian ink may be formed in the following manner: Take of isinglass three ounces, make it into a size by dissolving over the fire in six ounces of soft water. Take then Spanish liquorice one ounce, dissolve it in two ounces of soft water over the fire in another vessel, then grind upon a slab with a heavy muller one ounce of ivory black with the Spanish liquorice mixture. Then add the same to the isinglass size while hot, and stir well together till thoroughly incorporated. Evaporate away the water, and then cast the remaining composition into a leaden mould slightly oiled, or make it up in any other convenient way. A good Indian ink is also said to be made from the fine soot of a lamp or candle. Mix this with the size of parchment, and it will give a good deep color. Burnt rice is considered a principal ingredient in the genuine Indian ink, with the addition of perfumes, &c., not essential to its qualities as an ink. Am. D. Circ., Dec. 1864.

Utilization of Brine. Alex. Whitelaw, Esq., in a paper read before the Philosophical Society of Glasgow, gives a "Practical Application of Dialysis," by which the salt is removed from brine of meat. When fresh meat had been sprinkled with salt for a few days, it was found swimming in brine. Fresh meat contained more than three-fourths of its weight of water, which was retained in it as in a sponge. But flesh had not the power to retain brine to that extent, and in similar circumstances it absorbed only about half as much saturated brine as of water, so that under the action of salt, flesh allowed a portion of its water to flow out. This expelled water was saturated with the soluble nutritive ingredients of the flesh. This juice of flesh was the material to which the process of dialysis was applied for the removal of the salt of brine, and for the production, at a cheap rate, of pure fresh extract of meat. The following was found a very cheap and effective arrangement for carrying on the process. A series of ox-bladders fitted with stop-cocks or gutta-percha mouth pieces and plugs, and hung on rods stretching across and into vats of water. The bladders were filled with brine, and hung in rows on poles across, and suspended into vats of water. The water in those vats was renewed once a day, or oftener if required, and he found that at the end of two or three days according to the size of the bladders employed, almost all the common salt and nitre had been removed, and that the liquid contained in the bladders was pure juice of flesh in a fresh and wholesome condition. Am. D. Circ.

Wafer Paper is much used in France as a vehicle for powders. It may be made by heating two common smoothing irons and touching their surface with butter, and then pouring on one of them a small quantity of thin paste, made of rice or wheat flour, the other iron being instantly applied so as to press the wafer between the two faces and cook it sufficiently. The iron must not be hot enough to scorch it. In using the wafer cut it of the proper size and dip it in water, place the powder on it and wrap or roll it up. It is said to be swallowed with the greatest facility.

Water Proof dressing for Shoes. R. Oil $\mathfrak{z}\text{v}$.; wax $\mathfrak{z}\text{ss}$.; burgundy pitch $\mathfrak{z}\text{ii}$.; oil of turpentine $\mathfrak{z}\text{ss}$.; melt together and apply until the leather is saturated.

2. Suet, rosin and beeswax melted and applied.

Weak Vision. With aged persons whose sight is enfeebled, and requires convex glasses, great benefit is sometimes derived from painting the brow and eye-lids with laudanum, and allowing it to remain all night. Am. D. Circ. ix. 3, 46.

REPORT OF THE CORRESPONDING SECRETARY.

In carrying out the resolution in regard to the exchange of the published Proceedings of this Association, for Pharmaceutical and Chemical Journals published abroad, the Corresponding Secretary has forwarded nineteen (19) copies of the Proceedings for 1864.

They were sent to the publishers of the following Journals :
Pharmaceutical Journal and Transactions, London.

Chemical News, London.

Chemist and Druggist, London.

London Lancet, London.

Journal de Pharmacie et de Chimie, Paris.

Répertoire de Pharmacie, Paris.

Annalen der Chemie u. Pharmacie, Leipzig.

Chemisches Centralblatt, Leipzig.

Neues Repertorium f. die Pharmacie, Munich.

Vierteljahresschrift f. Pharmacie, Munich.

Neues Jahrbuch f. die Pharmacie, Speyer.

Archiv der Pharmacie, Hanover.

Canstatt's Jahresbericht für Pharmacie, Würzburg.

Oesterreichische Zeitschrift für Pharmacie, Vienna.

Schweizerische Wochenschrift für Pharmacie, Schaffhausen.
Switzerland.

Zeitschrift für Chemie und Pharmacie, Heidelberg.

Journal de Pharmacie d'Anvers, Antwerp, Belgium.

Bulletin de la Société de Pharmacie de Bruxelles, Belgium.

Pharmaceutische Zeitschrift für Russland, St. Petersburg,
Russia.

The Journals that have reached the Committee on Progress of Pharmacy, in exchange are the

Chemical News.

Chemist and Druggist.

Canstatt's Jahresbericht für Pharmacie, 1863, Würzburg.

Neues Jarbuch für Pharmacie, Speyer.

Vierteljahresschrift für Pharmacie, Munich.

Neues Repertorium für Pharmacie, Munich.

Bericht über die Verhandlungen der General-Versammlung der Pharmaceutischen Gesellschaft in St. Petersburg.

(Report of the Proceedings of the general meeting of the Pharmaceutical Association of St. Petersburg.)

A complete set of the Proceedings (with the exception of 1855 out of print) was forwarded to the British Pharmaceutical Conference, through its President, Henry Deane.

A copy of the Proceedings of the British Pharmaceutical Conference for 1864 was received, accompanied by the following letter from Dr. John Attfield, Secretary to the Conference, enclosing a resolution passed at one of its sittings.

17 Bloomsbury Square, London, England, Dec. 14, 1864.

To Mr. P. W. BARNARD, Corresponding Secretary of the American Pharmaceutical Association.

SIR,—I have the honor of forwarding to you the following copy of a resolution adopted at the annual meeting of the British Pharmaceutical Conference. It is an acknowledgement of the address of salutation and gratulation sent to the Conference by the American Pharmaceutical Association:

September 19th, 1864.

Resolved, "That the members of the British Pharmaceutical Conference have received with much satisfaction the friendly greetings of their brethren of the American Pharmaceutical Association. They appreciate these expressions of goodwill the more highly, from their being spontaneously offered at so early a stage in the existence of their own Society, and they see, in this circumstance, evidence that their American brethren are watchful observers of all endeavors for the advancement of Pharmacy wherever made. The members of this Conference trust that such an example will not be without its influence in this country, and desire to record their feeling that the scientific labors of American Pharmacentists are worthy of being more extensively known in Great Britain than has been the case hitherto.

This Conference heartily reciprocates the expression of feelings of interest and goodwill towards the American Pharmaceutical Association, and will gladly embrace all opportunities for communication with its

members, several of whom are honorably known in England through their scientific researches."

I also beg to forward a copy of the "Proceedings" of the Conference for 1864, at page 101 of which a record of the above resolution will be found.

I am sir, yours faithfully,

JOHN ATTFIELD.

The Corresponding Secretary has obtained from the various local Pharmaceutical bodies the following information :

THE MASSACHUSETTS COLLEGE OF PHARMACY.—The officers remain as last year, and the condition of the College is good. The monthly meetings have been fully attended, and of much interest. The membership is gradually increasing, as it is regarded as indispensable to success. Efforts are being made to secure a course of lectures during the coming winter on Pharmacy, Chemistry and Botany.

Members of the College are expected to deliver these lectures, as it is regarded important that they should be strictly practical.

THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.—This College has, during the past year, continued to meet increasing success in its efforts to disseminate the knowledge of Pharmacy.

Its lectures have been attended by thirty five students, and at the close of the session seven students received its Diploma as Graduate in Pharmacy.

The meetings of the Board of Trustees, as also the conversational meetings have been well attended and of much interest.

Its present Professors are Ferdinand F. Mayer, who occupies the chair of Chemistry, George Thurber, M. D., the chair of Materia Medica and Botany, and P. W. Bedford recently appointed lecturer on Pharmacy.

THE PHILADELPHIA COLLEGE OF PHARMACY.—This College continues its successful career of instruction. Its last session was attended by one hundred and six students, of whom twenty-nine received its diploma after the usual examinations. The Professors of this College are Robert Bridges, M. D., Professor of Chemistry, Wm. Procter, Jr., Professor of Pharmacy, Edward Parrish, Professor of Materia Medica.

The Journal of Pharmacy has been issued bi-monthly as usual,

but in common with all scientific periodicals its finances have been depressed. It will undoubtedly receive an increase in its circulation by the opening of mail communication to portions of our country that have been debarred of this privilege during the past four years.

The usual scientific meetings have not been as well attended as in previous years. No new labors have been entered into, but in other respects, this College is prospering with its usual success.

THE MARYLAND COLLEGE OF PHARMACY.—Since the reorganization of this College a few years ago, its efforts have been attended with great success. Its class of students at the last session numbered thirty, and at the close seven received its diploma as Graduates.

There is much interest among members of this College, and the Pharmacutists of Baltimore, for the success of this institution, and its graduates have the preference over others in obtaining positions. Financially this College is prosperous, having no indebtedness, and possessing a good cabinet of *Materia Medica* and Botanical specimens, as also of Chemistry and apparatus. There is also a nucleus of a Pharmaceutical and Scientific Library, which is constantly increasing. The meetings are well attended, and the College may be said to be one of the most successful in the United States. Its Faculty are Lewis H. Steiner, Professor of Chemistry; J. R. Winslow, M. D., Professor of *Materia Medica*; J. Faris Moore, Professor of Pharmacy.

THE CINCINNATI COLLEGE OF PHARMACY.—The hope expressed in the last report, that the presence of the American Pharmaceutical Association holding their meeting in that city would revive this institution, has not been realized. Nothing new has been attempted, and the organization lives, but does not seem to thrive. It was proposed to institute a course of lectures, but nothing has thus far been accomplished.

THE CHICAGO COLLEGE OF PHARMACY.—From the letter of its Secretary it would appear that the lectures have been discontinued. Conversational meetings are held monthly, and many

papers of interest have been read. This growing city of the West, should be alive to Pharmaceutical education, and it is to be hoped that this College will soon establish a school of Pharmacy that will receive ample support.

THE ST. LOUIS PHARMACEUTICAL ASSOCIATION.—In the report of last year it was stated that efforts were being made to establish a College of Pharmacy. It is gratifying to hear that it is now accomplished and the St. Louis College of Pharmacy is established. The prospectus of its lectures, lately issued gives evidence that the members of this institution have taken hold of the work with energy. The Faculty are A. Wadgymar, Professor of Chemistry and Botany ; J. S. B. Alleyne, M. D., Professor of Materia Medica ; J. O'Gallagher, M. D., Professor of Pharmacy.

A portion of the lectures are already in progress, those on Botany, and the class have practical instruction by excursions in the environs of that city. The lectures on the other branches taught will commence October 2d, and continue till the beginning of March following.

No information has been received from other Pharmaceutical organizations in the United States.

P. W. BEDFORD,
Corresponding Secretary.

SPECIAL REPORTS AND ESSAYS.

NOTES ON THE SOPHISTICATION OF RECTIFIED OIL OF AMBER, OLEUM SUCCINI RECTIFICATUM, U. S. P.

BY ALBERT E. EBERT.

Having recently observed that a specimen of "rectified oil of amber" was insoluble in stronger alcohol, a further investigation of the subject was deemed desirable. The oil in question, upon a closer examination, was found to have none of the characteristics of the genuine article, as described in the books, but to bear a striking resemblance to "Kerosene," or some similar product obtained by the distillation of petroleum or bituminous coal. I procured several specimens of the oil, from different sources, with the idea of ascertaining the quality of it as found, at present, in the market.

None of these samples bore any analogy to the genuine oil, but appeared to be sophistications. Two of the five samples I obtained corresponded with the original specimen in resemblance to Kerosene, while an equal number appeared to be merely resinified oil of turpentine. These latter specimens were obtained from dispensing Pharmacutists, while the remaining ones ("Kerosene variety") were furnished by reliable wholesale druggists. The fifth sample was represented to me as a genuine article of crude oil of amber, and as it appeared to have some of the properties of the true oil, I determined to prepare from it the rectified article.

It was a thick, dark colored liquid, with an empyreumatic tarry odor, partially soluble in stronger alcohol, and having the sp. gr. 1.045 at 60° F. I subjected sixteen fluidounces of this commercial crude oil in a glass retort to distillation, with the requi-

site quantity of water, as directed by the U. S. P. After distilling over nearly all the water, I found that the yield of rectified oil was not quite two fluid drachms, although the mixture had been kept at a constant boiling temperature. This result led me to think that either by a previous distillation it had been deprived of its essential oil, or that it was an adulterated article. I procured 2 lbs. av. of amber ("Succinum,") which was first subjected to an examination and found to be a true article.

It was mixed with an equal weight of sand, placed in an iron retort, and subjected to heat. Vapors of a white color were abundantly evolved, which, when inhaled, excited coughing. These vapors, when passed through water, were dissolved, and the solution, after concentration, deposited crystals of succinic acid. The oil soon came over quite rapidly, the first portion of a yellowish color, which was followed by a thick dark colored liquid; heat was continued until volatile matter ceased to pass over.

From twenty-nine troy ounces of the resin I obtained twenty-one fluid ounces of crude oil of a very dark color, having a strong succinic, empyreumatic odor, and the sp. gr. .985 at 60° F. Twenty fluidounces of this crude oil were mixed with seven and a half pints of water placed in a glass retort, heat applied through means of a sand bath, and distilled until five pints of the water with the oil had passed over into the receiver. I would here remark that, to maintain the mixture at a constant boiling temperature, in a glass distillatory vessel, I found it necessary to cover the head and neck of the retort with a tin hood, thereby retaining the heat. When this is not observed, the yield of the volatile oil will be considerably smaller. The oil, when separated from the water, measured two and a half fluid ounces, (12½ per cent.) This is the *Oleum Succini Rectificatum* (U. S. P.) having an amber color, and the peculiar succinic odor, sp. gr. .903 at 60° F., beginning to boil at 339° F. and its temperature continuing to rise to 367° F., soluble in alcohol to a limited extent, but dissolving in all proportions in chloroform, ether, bisulphuret of carbon, and the fixed oils. The residue left in the retort after the distillation of the rectified oil of amber, (U. S. P.) was of a brown color, sp. gr. 1.019 at 60° F. having the consistence of simple

syrup, and possessing to a marked degree the odor of the oil of amber; it was partially soluble in stronger alcohol. This residue had, to a marked extent, a resemblance to the commercial article sold as crude oil of amber.

The annexed table shows the properties of, and the action of reagents upon the several oils examined. (See page 152.)

The conclusions based upon the foregoing experiments are, first, that rectified oil of amber is extremely scarce, if not entirely absent from the market; secondly, that the articles sold as such are Kerosene, modified, perhaps, by heat and resinified oil of turpentine.

I observed that Kerosene when heated to 360° F., and upwards, lost much of its coaly odor, acquired an amber color, and was rendered very similar in appearance to the commercial rectified oil of amber, as seen by sample upon the table, and that the change became more apparent with an increase of heat, as seen by another sample. The commercial oil, under the same conditions, suffered similar changes.

This Kerosene variety, when exposed to direct sun-light, is distinctly opalescent, and it is further distinguished from the genuine oil by its insolubility in alcohol, and the absence of a resinous body when treated with nitric acid. It is inferred that this variety represents the article now furnished to the trade, as the remaining samples were from dispensing establishments where they had long been in stock. The latter variety, (turpentine,) is sufficiently distinguished by its odor, and violent fulminating action with iodine.

The product of the oxidation of forty grains of true oil of amber, by one hundred grains of nitric acid, weighed thirty-four grains. This substance was partially soluble in alcohol, wholly so in liquor potassæ from which it was precipitated by a dilute acid.

When dry it had the sp. gr. 1.103, broke with a resinous fracture, and was readily reduced to powder. This is the article described as "artificial musk," but it possessed none of the odor of that substance. Although well washed, it still retained a strong nitrous odor.

	RECTIFIED OIL OF ANKER, U. S. P.	COMMERCIAL RECTIFIED OIL OF ANKER. Two samples, resembling Kerosene in physical prop- erties, having similar de- partment with reagents.	COMMERCIAL RECTIFIED OIL OF ANKER. Two samples, having the characteristic properties of Oil of Turpentine.
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PHYSICAL PROPERTIES.

Sp. gr. at 60° F.	.908	No. 1. 822	No. 2. 831	No. 1. 878	No. 2. 896
Boiling point.	339° F.	No. 1. 228° F.	No. 2. 294° F.	No. 1. 303° F.	No. 2. 312° F.
Solub'y in stronger alcohol. Sp. g. 817 at 60° F.	1 part of oil in 4 parts al- cohol.	Not soluble: forming when shaken together a milky mixture, the oil separating on standing, and sinking to the bottom of the vessel.		No. 1: 1 part oil in 3 parts alcohol. No. 2: 1 part oil in 4 parts alcohol.	
Solubility in al- cohol. Sp. gr. 836 at 60° F.	1 part of oil in 17 parts alcohol.	Not soluble.		1 part oil in 8½ parts alcohol.	

ACTIONS WITH REAGENTS.

Bromine.	Very violent reaction, giving off white fumes, the liquid changing in color from a pink to a purple, then to a green, and ultimately to a brown, forming a uniform mixture.	Violent reaction, with effervescence and generation of white fumes, the bromine dissolving slightly in the oil, precipitating a little brownish resinous matter, forming two layers.	Violent fulmination, with evolution of white fumes; much of the oil was thrown out of the dish. On the addition of more bromine, the same action was observed.
Maisch's Solution Bromine	No violent reaction, forming two strata, the lower layer passing through the different shades of pink, purple and a reddish-brown.	The solution of bromine sinking to the bottom, producing no perceptible change on the supernatant oil.	Evolving white fumes, forming two layers, the upper being of a pink, and changing to a green color, the lower stratum at first of a purple, becoming dark brown on standing.
Iodine.	Without any visible reaction, forming a dark brown thick liquid, with a slight deposit, which is afterwards dissolved in the upper stratum.	Soluble only to a very slight extent, the oil assuming a pale red color, gradually changing to a dark brown.	Fulminates with energy, giving off violet vapors, the temperature rising from 73° F. to 152° F. (80 deg.) the oil changing in color to a reddish-brown, with a precipitate of a soft dark brown mass, emitting a terbinthineous and empyreumatic odor.
Maisch's Solution Iodine.	On the addition of the ethereal solution to the oil, a spreading of the mixture is produced, which extends to the rim of the crystal, returning to the centre, leaving undulating lines on the sides of the crystal. On standing, it forms two layers—the upper of a reddish brown color, the lower dark brown, of a thick consistency.	Producing also a spreading, but with circular wavy lines, the upper stratum being of a light red, and the lower of a dark brown color.	No violent reaction, and but little spreading, the solution settling to the bottom of the crystal, having acquired a dark brown color, the upper stratum having a light red color.
Sulphuric Acid.	Producing a deposit of a reddish-brown color, having a resinous appearance.	It only imparts to the acid which sinks to the bottom of the crystal a reddish-brown color, with comparatively little deposit.	Emitting white fumes of a terbinthineous odor, the acid forming with the oil a compound of a reddish-brown color.
Hydrochloric Acid.	Forming two layers, the oil assuming a reddish color on standing.	No change in color.	Forms two layers, the oil changing to a yellowish-green color; when mixed together by agitation, a milky mixture is produced.
Nitric Acid.	Changing the oil at first to a red, which becomes darker in color. On standing some time, a large quantity of a brown resinous matter is formed on the surface.	No change in color is perceptible. After standing 24 hours, a film is produced of a light yellowish color, floating on the surface of the mixture.	No change at first, but after standing 24 hours a light brown color is produced, forming two layers.

NOTE.—Since writing the above, I have been led into the “secrets of the trade” by one of the “initiated,” who informs me that the “rectified oil of amber” is prepared by agitating turpentine with the crude oil, until the desired shade of color is acquired, when it is separated and offered for sale. As turpentine has been rather expensive of late, it would appear that some ingenious individual has improved this process, at the same time increasing the profits, by simply substituting Kerosene for the turpentine, and proceeding “*Secundum Artem*.”

ON CAMPHOR WATER.

BY G. F. H. MARKOE.

“Which process for Camphor Water is to be preferred, that of the U. S. Pharmacopœia or of the British Pharmacopœia?”

The United States Pharmacopœia directs Camphor Water to be made thus :

Rub 120 grains of Camphor with 40 minims of Alcohol, then with 240 grains of Carbonate of Magnesia, then with 2 pints of water gradually added, and lastly filter through paper.

Two pints of Camphor Water were carefully prepared in strict accordance with the above formula, and the magma of carbonate of magnesia and camphor remaining on the filter was transferred to a small beaker and treated with dilute sulphuric acid in very slight excess, by which means the magnesia was dissolved as sulphate, and the camphor separated by the process was collected on a small filter, washed with camphor water to remove adhering sulphate of magnesia, then dried by pressure between folds of bibulous paper.

The camphor is now in the form of a dirty gray cake, being in fact very “crude.” To purify it we dissolve it in a small portion of chloroform, and throw the solution into a small funnel, the neck of which is stopped with a bit of cotton, and finally the camphor obtained by the spontaneous evaporation of the chloroformic solution is carefully weighed, and the amount obtained deducted from the 120 grains of camphor used in the first instance.

Six experiments were made at various times with the following results :

- | | | | | | |
|----|----------|---------------|---------|-------------------|--------|
| 1. | 120 grs. | camphor used, | 55 grs. | obtained from the | magma. |
| 2. | 120 grs. | " | " | 59 grs. | " " " |
| 3. | 120 grs. | " | " | 54 grs. | " " " |
| 4. | 120 grs. | " | " | 56 grs. | " " " |
| 5. | 120 grs. | " | " | 57 grs. | " " " |
| 6. | 120 grs. | " | " | 55 grs. | " " " |

The average amount by these experiments being fifty-six (56) grains, from the 120 grains used each time.

Deducting 56 grains from 120 grains gives us sixty-four (64) grains, which must be the amount of camphor held in solution by two pints of the Camphor Water of the U. S. Pharmacopœia, being in the proportion of two (2) grains to the fluidounce.

The British Pharmacopœia orders

Camphor broken in pieces, half an ounce, (avoirdupois) (219 grains troy, within a fraction.)

Distilled water one gallon (imperial measure.)

Enclose the camphor in a muslin bag, and attach this to the stopper of a jar containing the distilled water. Invert the jar, allow it to stand at least two days, and pour off the solution when required.

One imperial gallon of Camphor Water was made by the British process, and after standing three days the undissolved camphor dried carefully between folds of filtering paper and carefully weighed.

219 grains troy were used, of which (137) one hundred and thirty-seven grains remained undissolved, the difference (82) eighty-two grains representing the amount of camphor in solution in one imperial gallon of the British preparation, or about half a grain to the fluidounce or one grain of camphor to 986 grains or minims of water; being quite near the statement made by Berzelius, that one part of camphor is taken up by 1000 parts of water by rubbing them together.

The statement contained in the U. S. Dispensatory, given on the authority of Wm. Hodgson, Jr., that "our own official preparation, when properly made, contains about 50 grains to the pint, or more than 8 grains to the fluidounce," is incorrect; it only holds in solution thirty-two (32) grains of camphor in each pint, or two (2) grains in each fluidounce.

The United States Pharmacopœia Camphor Water contains 2 grains of Camphor to the fluidounce.

The British preparation contains about half a ($\frac{1}{2}$) grain of Camphor in each fluidounce.

The U. S. P. preparation is thus proved to be four times the strength of the British preparation.

Boston, September, 1865.

ON APPARATUS FOR REGULATING TEMPERATURES BELOW THE BOILING POINT.

BY P. W. BEDFORD.

Query 11. "What is the most convenient form of apparatus adapted to common use, for regulating the temperature at or below 160°, 140° and 120° respectively as directed in the evaporation of some of the official extracts?"

In the last edition of our national Pharmacopœia, there are many of the preparations which are directed to be made, or which in a portion of the process are to be maintained at a temperature not to exceed 120°, 140°, 150° or 160°. Of the solid Extracts, there are nine: Alcoholic Extracts of Aconite, Hemlock, Digitalis, Black Hellebore, Rhubarb, Stramonium and Valerian, Extracts of Rhatany and Stramonium and the Purified Extract of Hemp.

Of the Fluid Extracts there are ten; Buchu, Cimicifuga, Hemlock, Ergot, Henbane, Lupulin, Serpentaria, Dandelion, Valerian and American Hellebore.

There are also several preparations of Iron, the Citrates and Tartrates, which come under the same direction.

In large manufacturing establishments it is the custom to evaporate such preparations in rooms heated either by stoves or steam, to the indicated temperature. The object of the inquiry to which this paper is a reply, is to offer some suitable apparatus adapted for common use, in the stores of our Pharmacutists.

Dr. Ure, in 1831, proposed an apparatus for regulating heat, as applied to pharmaceutical and chemical processes, known as Ure's Thermostat. This apparatus, which will be found figured

in Ure's Dictionary, is, however, too complicated and expensive for our purposes. It would be suitable for Dyeing establishments and chemical manufacturing on a large scale.

In many of the forms of gas stoves and furnaces which are in daily use, it is quite practical to maintain a temperature between 120° and 160° simply by burning as small an amount of gas as will remain lighted, and keeping the dish or vessel, in which is the material for evaporation, at such a distance from the flame, that a thermometer introduced in the material will show the temperature, to be uniform with that desired. But the better method, and that which the writer would recommend as simple and reliable, would be to interpose between the flame, and the material operated upon, an air bath. This may be a simple cast or wrought iron vessel, of such dimensions as will cover the top of the gas furnace, and may be fitted with rings to suit the various sizes of evaporating dishes in general use. The sample shown accomplishes the desired end. With some gas furnaces, the direct heat may be so reduced, that a thermometer suspended at the top of the furnace directly over the flame, will be maintained at 110° . Another method of keeping a regular temperature where the source of heat cannot be reduced to make the air bath available, would be to have a water bath, in which the inner vessel containing the material operated upon is soldered to the outer case of the water bath, and, by means of two pipes, passing such an amount of water through the water bath as will reduce the temperature to the desired point.

ON THE USE OF GLYCERINE TO PREVENT THE DEPOSITION OF APOTHEME.

BY A. B. TAYLOR.

"In what preparations may Glycerin be used to prevent the deposition of apotheme? What is the minimum quantity that will answer the purpose, and will such preparations bear dilution?"

The following remarks are offered in reply to the above query, which was accepted by me at the last meeting of the Association.

The only preparations, perhaps, in which Glycerin could be

used for the purpose specified, are Fluid Extracts, Decoctions, Infusions and Tinctures, and accordingly experiments were instituted with specimens of each of these classes.

Fluid Extract of Cinchona.—This extract prepared according to the formula given in my essay on the subject last year, appears to be in every respect satisfactory. I would not recommend any reduction in the quantity of Glycerin there ordered, although a trifling reduction might, perhaps, be made without injury to the preparation. Upon being diluted with water it is rendered turbid, but the infusion thus made extemporaneously, becomes clear again, upon the addition of a small quantity of diluted sulphuric acid, or of elixir vitriol.

Fluid Extract of Catechu.

Fluid Extract of Kino.

Fluid Extract of Krameria.

The formulas given for these preparations, by Prof. Procter, in his paper on Fluid Extracts, published in the volume of Proceedings for 1863, are satisfactory, and the quantity of Glycerin as small as would be advisable.

The first two are miscible with water in any proportion without precipitation; the Fluid Extract of Krameria is slightly precipitated on the addition of water.

Fluid Extract of Rhubarb.—Not being entirely satisfied with this preparation, when made according to the U. S. Pharmacopœia, I was induced to prepare some after the following formula, in accordance with a suggestion offered in my essay, read last year.

Take of Rhubarb in moderately fine powder 16 troy-ounces.

Glycerin 8 fluidounces.

Alcohol 24 fluidounces.

Diluted alcohol a sufficient quantity.

Moisten the Rhubarb with four fluidounces of the alcohol, introduce it into a conical glass percolator, press it gently, and pour upon it gradually twelve fluidounces of alcohol. When the liquid has disappeared from the surface, gradually pour on, first a mixture of eight fluidounces each of Glycerin and Alcohol, and afterwards diluted Alcohol, until three pints of liquid have been obtained. Set aside the first pint obtained, in a warm place,

until reduced by spontaneous evaporation to six fluidounces. Evaporate the remainder of the liquid by a gentle heat to ten fluidounces, mix with the reserved portion, and strain, if necessary, through a muslin strainer.

The resulting extract, of which a specimen is herewith submitted, is of a deep reddish-brown color, entirely clear and transparent in thin layers, and having in perfection the flavor of the root.

It is much thinner than the official extract, and, as is believed, will be found to be a more satisfactory preparation. A precipitate is formed by the addition of water; the extract is, however, soluble in all proportions in syrup, so that an elegant syrup may be prepared from it extemporaneously by the simple addition of syrup, and the syrup thus made of the official strength is miscible with water without precipitation. A sample is herewith presented.

Decoction of Yellow Cinchona.—For the purpose of comparison, two decoctions were prepared, one according to the U. S. Pharmacopœia, the other in the same manner, excepting the addition of a fluidounce of Glycerin in making a pint. The two decoctions were very similar in appearance; that containing the Glycerin having a rather darker color. No difference in the strength of the two could be discovered by the taste, the bitterness of one being somewhat disguised by the Glycerin. After standing for two days both of the decoctions remained equally turbid; an ounce of the one containing Glycerin remained slightly turbid after the addition of two fluidrachms of Glycerin, but became perfectly clear upon the addition of a third fluidrachm.

The conclusion arrived at from these experiments was, that the addition of Glycerin to the decoction would not be advisable, for although a greater amount of extractive matter might be obtained from a given amount of the bark, still the same end (that is increased strength) might be arrived at more simply and economically by using a larger quantity of the cinchona bark.

Infusion of Yellow Cinchona.—Two cold infusions, of half a pint each, were prepared, one with water, the other with water

to which half an ounce of Glycerin had been added. (The aromatic sulphuric acid being left out in both cases.) The results and conclusions arrived at were substantially the same as in the preceding experiment with the decoctions.

Tincture of Cinchona.

Compound Tincture of Cinchona.

These tinctures were prepared according to the U. S. Pharmacopœia, with the exception that a fluidounce of Glycerin was substituted for a fluidounce of water in each pint of the menstruum used.

The resulting preparations did not differ in appearance or sensible properties from the officinal tinctures, and up to this time, now some three months, have not shown any disposition to precipitate cinchonic red, remaining perfectly clear and bright. This experiment is not decisive, but I am inclined to believe that the addition of this quantity of Glycerin to these tinctures is beneficial.

ON GLYCERIN AS A SUBSTITUTE FOR ALCOHOL.

BY W. J. M. GORDON, CINCINNATI.

"How far is Glycerin capable of substituting alcohol for extracting drugs for pharmaceutical purposes? Would such substitution be economical?"

To the first portion of this question I am not prepared to give a specific answer, that is as to how far it is capable of substituting alcohol, in extracting drugs for pharmaceutical use; not that I have not given it due attention, but to do so would require a list of articles to be named in which it could be used as a substitute. In a general way, however, I think I can answer it satisfactorily.

First, my conclusion is that Glycerin is not adapted as a general rule to the extraction of vegetable substances in the place of alcohol, not that it does not possess a wide range of solvent properties, but from the nature of the article, and the difficulty in operating with it. The lack of great fluidity would prevent its rapid passage through the substance, and increase the length

of time necessary for exhaustion, and an excess of menstruum, as in the use of alcohol or water, would be beyond control, as it will not evaporate and could not be reduced. But there are uses directly in connection with this question, that both economy and advantage to the preparation would be gained by its use, and from considerable practical experience I am satisfied are well worthy of attention, and that is as a preservative in the place of alcohol or sugar; its antiseptic and solvent properties being very great, and possessing no objectionable property whatever in connection with any medicinal substance. Fluid extracts made in the usual way, and Glycerin added before the alcohol was removed, I have found in a large number of articles to present a much handsomer appearance; more being retained in solution when completed, and not as much turbidness as is generally seen when finished in the usual manner. The saving in alcohol, apart from any advantage that Glycerin possesses, would be at least one-half, as Glycerin can be obtained at less than half the cost of alcohol.

There are peculiarities in its action, the same as with other substances.

For instance, Fluid Extract of Rhubarb, in which Glycerin is used alone as a preservative, presents a very turbid appearance, which is readily removed by the addition of a small quantity of sugar, while Extract of Cinchona, as now generally known, is much handsomer prepared with Glycerin than with any other substance. I am satisfied that a large proportion of the medicinal vegetable fluid extracts can be better preserved with Glycerin than with either alcohol or sugar.

ON LIQUIDAMBAR STYRACIFLUA AND ITS BALSAMIC RESIN.

BY WILLIAM PROCTER, JR.

According to Michaux (*Sylva Americana*), Liquidambar styraciflua is the most extensively diffused of all the forest trees of North America, being found as far north as $43^{\circ} 30'$ on the Atlantic coast, and as far south as old Mexico, spreading westward

as far as the Illinois river, and southward thence to the Gulf of Mexico. Sweet gum is its most common name, but in New Jersey it is known as *linn*, and in Louisiana it is called *copalm*. It is probably largely found in Texas, and some of the largest specimens were seen by Michaux in Georgia, between 5 and 6 feet in diameter, and W. P. Creecy speaks of specimens in the State of Mississippi 100 feet high. In New Jersey I have seen the tree 60 feet high and 2½ feet in diameter. From an early period it has been known that this tree affords, both spontaneously and when wounded to the sap, a soft resinous exudation, which is known by the name of *sweet gum*, and used as a masticatory. There are two forms of this exudation which are described by Guibourt in his *Histoire des Drogues*, as coming from Mexico and Louisiana. One soft and resinous, becoming brittle by age and analogous to tolu in consistence, the result of spontaneous exudation and hardening on the bark. The other a transparent oleo-resinous liquid, like copaiba in consistence, and obtained, by incision, immediately into the vessels in which it is kept to avoid the action of the air upon it. According to Guibourt these products contain considerable quantities of benzoic acid, and have the odor of storax. In vol. vi., page, 190 of the *American Journal of Pharmacy*, William Hodgson, Jr., states, that 1000 parts of the balsam procured from Louisiana, yielded, by boiling with soda and precipitation by an acid, 42 parts of benzoic acid, and he thinks as much as 6 per cent might be obtained with careful manipulation.

Prof. C. W. Wright, of Kentucky (see *Am. Jour. Pharm.* vol. iv., new series, 1856, p. 413), says, "When an incision is made through the bark of this tree, a resinous juice exudes which possesses an agreeable balsamic odor; at first it has the consistence of turpentine, and has a stronger smell than after it has become resinified. Contrary to the statements made in the U. S. Dispensatory this tree furnishes a considerable quantity of resin in the Middle States bordering upon the Ohio. It is annually collected and sold under the name of gum wax. By proper incisions the tree will yield annually about three pounds of the resin." Prof. Wright says its composition is *benzoic acid*, *volatile oil*, *styracin*, &c., which accords with Bonastre.

In 1856 the writer sent a specimen of this balsam, obtained at Cincinnati, to Mr. Hanbury of London, who in a letter on that subject states that the balsamic acid present in it is *cinnamic* and not benzoic acid, as described by Guibourt, Hodgson and others. At the recommendation of the writer this balsam was made the subject of an inaugural essay presented to the Philadelphia College of Pharmacy, 1860, by Wm. Prior Creecy, of Mississippi, (see vol. viii. 3d series of the American Journal of Pharmacy,) who, starting from the suggestion of Mr. Hanbury, sought to determine the nature of the volatile acid matter in the balsam. The results of numerous experiments by Mr. Creecy, seems to prove that the chief volume of the acid present is cinnamic, but that the balsam also contains a smaller portion of benzoic acid. He also found a volatile oily substance, having the fragrance of the balsam, in small quantity, besides a large quantity of resin.

These are the principal observations I have been able to collect in reference to this subject, and now will make a few remarks pointing more directly to the question called for by the query of 1863.

In the fewest words this query asks, whether the Liquidambar of the United States will yield a product similar to storax, if treated like the Liquidambar orientale, the source of that drug. Now, according to Mr. Hanbury's account (Pharm. Journ. 1857,) liquid storax is prepared by removing the outer bark of the latter tree, and scraping the inner live bark which causes it to secrete the storax balsam, which is then scraped off together with parts of the bark and purified by boiling it in large copper boilers, during which probably the moisture of the inspissated juice is evaporated and the extraneous bark removed; when it is strained into casks. Another account says, that the inner bark itself is boiled and subsequently expressed to remove the balsam, and that the residual bark is the storax bark of commerce. Viewed from the standpoint afforded by the American tree, I should be more inclined to believe the former account was the correct one, and that in the heating process, which is probably carried out without much care, the whole mass acquires a uniform adhesive texture, and a semi-empyreumatic odor, points which chiefly distinguish the oriental balsam from its American analogue.

Earnest endeavors were made after the last meeting to obtain some practical experiments on the tree as it grows in Tennessee, Arkansas, and other places from friends residing in those localities; but all my correspondents failed me except my friend Hennell Stevens, Medical Storekeeper U. S. Army, at Memphis, who sent me a small specimen of the balsam obtained by incising the bark transversely, and another vial of balsam the result of natural exudation. The main point was not reached; owing to the disturbed condition of all the country where the temperature is favorable to the process, and for want of the time necessary to make the experiment, it has not been possible to get the results required. In the month of May last, I determined to try some experiments on the New Jersey tree. The first was about 30 years old and a foot in diameter, growing in a high and dry soil unfavorable to its development. A portion of the outer bark was removed, and the exposed live bark wounded by bruising, so that it cracked in several places. In July the inner bark was found to be entirely dead, and beneath the dead bark where it joined the upper edge, an exudation of soft resin was found, like that from the south-west in odor and taste. Another experiment was tried upon a tree growing near water, two and a half feet in diameter, with no better success. The same balsamic exudation after a time, but too limited in its quantity and too slow in its secretion to meet the case required. It should be observed that the bark itself, when recently cut, possesses no aroma like the balsam. The latter does not, like the turpentine, circulate in the juices of the plant, but appears to be due to the action of air on those juices where a rupture of the tissues takes place, being apparently an effort of nature to heal the abrasion. When the inner bark, free from contact with the oleo-resin, is triturated with a little water and permanganate of potassa is added, no indication of cinnamic acid occurs. Now this fact may not be true of the tree in all localities. At the south-west the bark may be resinous in its nature, and imbued with a balsamic odor, and thus approach more nearly in character the oriental species.

I am informed that in the lower counties of Delaware and Maryland the farmers are in the habit of collecting the balsam under the name of "gum wax" for use as a masticatory, and as

an application for corns. By means of a hatchet a narrow transverse section of bark is removed, the incision being made at an angle of 45° , so as to form a sort of pocket in which the resin exuding from the upper side of the wound collects. It is often as colorless as turpentine and always exceedingly adhesive, and mostly sought from trees of two or two and a half feet thick.

Michaux casually observes that in repeated experiments in Carolina, trees a foot in diameter afforded but half an ounce of exudation in a fortnight.

It may be proper here to notice a letter received soon after the meeting of 1864, from Mr. Daniel Roemer, of Cincinnati, who had resided in Mexico: "Sir you have continued to you the query, 'will Liquidambar s. yield a product identical or nearly so with storax, &c.' A great quantity of *liquid storax* is produced in Mejico; from what plant I am unable to say; it is very black upon the top, and the dark color penetrates generally somewhat deeper than in the commercial storax. It is so plentiful that the Mejican Pharmacopœia directs Emplast. Hydrargyri to be made with it; and it must be of excellent quality, as the French perfumers (Mejicans are too civilized and too aristocratic to use any other than French perfumery,) use this in place of the imported storax whenever they need it, which is undoubtedly a great testimony to its excellence." M. Roemer was unacquainted with the botanical source of this native storax, but referred to an eminent Pharmaceutist of the city of Mexico, Don Leopoldo Rio de la Loza, who he believed could give information about it. Whether this Mexican storax is really a product of the Liquidambar or of a tree of the genus *Myrospermum*, I am wholly at loss to determine, but deem it a subject of interest.

It may be apposite to refer to the bark recently noticed in the Journal of Pharmacy by Prof. Mayer, which came into New York commerce, under the name of *sacred bark*, as in his opinion probably a product of Liquidambar Altingiana of Blume, and to which one of the varieties of storax is attributed by some writers, contrary to Mr. Hanbury, who inclines to refer it all to the species orientale. The fact that Prof. Mayer detected cinnamic acid in this bark, and a soft resin with a storax-like odor, renders it interesting to know whether it really belongs to some species of

Liquidambar ; for, unless it can be shown that this acid may be secreted in the natural tissues of one species and not in others, it is an argument against that origin of the bark in question.

Having in my possession a few ounces of the "sweet gum" which I had kept in my cabinet for eight years, it was determined to make a few experiments with it in reference to the volatile acid present.

Half an ounce of the balsam in fragments, was put into a small iron capsule, covered with filtering paper held closely by paste, and a small Mohr's subliming cap of pasteboard applied over it, gas heat was gradually applied as long as crystals collected in the cap. The quantity was much smaller than an equal weight of benzoïn would have yielded, but in appearance they were like benzoic acid. Examined with a lens they presented the form of flattened needles, some of which have oblique terminations. Placed on mercury, in which a thermometer dipped, and heat applied, they partially fused when the mercury arose to 260° F., when at 280° the crystals dropped upon the mercury instantly melted. They are soluble in cold strong nitric acid, and on standing a short time produced an abundant crystallization of nitro-cinnamic acid. When heat is applied to the solution, nitric oxide is evolved with ebullition, a few crystals mixed with a little permanganate of potassa instantly developed the oil of bitter almonds.

Half an ounce more of the sweet gum, in coarse powder, was boiled with milk of lime, water being added several times, until apparently exhausted, the amber colored liquid filtered and allowed to stand until cool. No precipitation occurred ; on again heating and adding muriatic acid in slight excess a crystalline precipitate fell, which when collected and dried weighed about eight grains. These crystals afforded oil of bitter almonds with permanganate, fused readily at 260° F., and yielded nitro-cinnamic acid with strong nitric acid. It is evident from these results that but little if any real benzoic acid exists, and that Mr. Creecy's experiment with the sublimed acid, testing by chlorinated lime, must have been imperfect, as a sublimate obtained in these experiments instantly developed oil of bitter almonds, in contact with permanganate of potassa. It is also evident that the earlier

observers, Bonastre and Hodgson mistook cinnamic for benzoic acid.

The leaves and capsules of the sweet gum both give a somewhat aromatic odor when bruised, and are both decidedly acid to the taste and to litmus. When the green capsules are bruised and thrown into alcohol, they become brown after a few hours, and afford a brown transparent tincture decidedly acid to litmus paper. The tincture of the fresh leaves made with alcohol .817 is green, decidedly acid and very astringent. When a per salt of iron is added a deep bluish black color is found, the greater part of which is discharged by heating to 212° F. It is highly probable that gallic acid exists to a considerable extent in these leaves, but I have not had time to verify the supposition. According to Prof. C. W. Wright, of Kentucky, the bark contains so much tannic and gallic acid as to be valuable as a remedy in diarrhoea.

In concluding this paper, the writer regrets that he has not been able to decide the question he had proposed to himself, viz : the preparation of liquid storax corresponding with that of the Levant, yet without asking a continuance of the subject he still hopes to accomplish it, now that access is to be obtained freely to the south-west.

Philadelphia, Sept. 1, 1865.

ON THE ACTIVE PRINCIPLE OF RHUS TOXICODENDRON.

BY JOHN M. MAISCH.

Notwithstanding the poisonous qualities of *Rhus Toxicodendron* have been known for a long time, it was not until the year 1857 that an analysis of its constituents were made by Dr. Joseph Khittel, which was published in Wittstein's *Vierteljahresschrift*, vii. 348-359. A condensed translation of this paper appeared in the *American Journal of Pharmacy*, 1858, p. 542-544. According to this author, the activity of the leaves of the poison oak depend on a volatile alkaloid, which he obtained by distilling the concentrated infusion of the powdered leaves

with caustic potassa, neutralizing the distillate with sulphuric acid, evaporating the liquid, and treating the residue with a mixture of equal quantities of ether and alcohol, whereby sulphate of ammonia was left behind; the ethereo-alcoholic solution was evaporated spontaneously, distilled with caustic potassa, and an alkaline liquid obtained, which could be neutralized with hydrochloric acid, and then yielded a precipitate with chloride of platinum.

Since that time, I have not met with another investigation.

I may as well state at the outset that my results are entirely at variance with those of Dr. Khittel; and it may, therefore, not be out of place to criticize the above process now.

It is well known that the *exhalations* of *Rhus Toxicodendron* exert a poisonous influence on the human body; the poisonous principle must, therefore, be volatile, and, at the same time, be naturally in such a loose state of combination as to be continually eliminated and separated with the usual products of vegetable exhalations. It is natural to suppose that, during the process of drying, the greatest portion of the poisonous principle should be lost. This loss must be still greater, if the dried leaves are powdered, a hot infusion prepared from them, and this infusion evaporated down to the original weight of the dried leaves. It is obvious that Dr. Khittel could not have selected a better method for obtaining the least possible quantity of the poisonous principle, if, indeed, it could be obtained by this process at all.

The Association being desirous to know by what method the activity of these leaves can best be preserved, I accepted the question, and commenced my experiments in 1864, basing them upon the results obtained by the author before mentioned. I may state here that I had frequently collected the leaves, flowers, and fruit of *Rhus Toxicodendron*, and its variety *radicans*, without ever experiencing any ill effects. I have handled all parts of the plant with perfect impunity, and have even spread the juice over my hands, without feeling more than a slight itching upon the upper side of the hand, which immediately disappeared on washing the hands with water. In a word, I considered myself so little subject to its influence, that I collected the leaves

for all the following experiments myself; and on one occasion, on the hills of the Wissahickon, laid down in the midst of a beautiful specimen of *Rhus Toxicodendron* var. *radicans*, which spread so prolifically over shrubs and trees, and through the grass beneath, that I was on all sides surrounded by its branches, leaves, and flowers; although remaining in this position for over fifteen minutes, selecting the most vigorous leaves, I escaped with no other effects than those described before, which yielded at once to ablutions with the water of this little stream.

I could hardly expect to try the efficacy of the poisonous principle, when isolated, upon my own person; the result, however, proved to be very different.

But to return to the experiments: I immersed 8½ ounces of the leaves of the true *Rhus Toxicodendron* in alcohol in sufficient quantity to cover it, and added enough sulphuric acid to produce a strong acid reaction, in order to combine all the alkaloid. The vessel was set aside for about nine months, the alcohol then spontaneously evaporated, the residue forcibly expressed, mixed with a little water, and again expressed, and the united liquids distilled with an excess of lime. I selected this base, because from its sparing solubility, it might be expected to act less energetically in inducing decomposition than potassa. The alkaline distillate, when collected by itself, reminded forcibly of the odor generated by decoctions of hemlock and henbane. The alkali was collected in an excess of dilute hydrochloric acid, and this solution had the same odor. It appeared most likely from this experiment that the odor was entirely distinct from the alkaline reaction, or, in other words, that the odorous compound and the alkali were two different bodies.

The solution had still an acid reaction from the excess of hydrochloric acid employed when the distillation was stopped. The liquid was now evaporated to dryness, in a current of dry air at a temperature of about 120° F., and yielded a considerable amount of a crystalline residue, to which the same odor still adhered to a certain degree. This crystalline mass now must contain the volatile alkaloid of Dr. Khittel.

A portion of it was dissolved in distilled water; the reaction of the solution was neutral to litmus paper. Tested with

Sonnenschein's phospho-molybdic acid, a light yellow precipitate was obtained which yielded with potassa the odor of ammonia only; with Mayer's iodo-hydrargyrate of potassium in acidulated solution, no precipitate was produced; on adding potassa, an orange brown precipitate occurred; tannic acid yielded no precipitate; neither did iodine; all the reactions proved the presence of ammonia only. A portion of the crystalline mass was now taken up by dilute sulphuric acid, again evaporated to near dryness, the residue almost neutralized by potassa, mixed with three times its bulk of 95 per cent. alcohol, and the same quantity of ether, and, after standing over night, filtered. The ethereal liquid was evaporated spontaneously, and left a minute residue, which, on being treated with potassa and heated, gave not the slightest evidence of an alkaline reaction; but phospho-molybdic acid appeared to create a very faint turbidity.

It was possible now that, by the long maceration of the leaves with sulphuric acid and alcohol, the alkaloid was decomposed. To ascertain this, twelve ounces of fresh leaves were collected, infused in cold water, expressed, and, after a second maceration, again expressed. The liquid was again distilled with caustic lime, and the distillate collected in dilute sulphuric acid. After spontaneous evaporation in a current of warm air, as before, the residue was carefully neutralized with bicarbonate of potassa, and treated with alcohol and ether with precisely the same results as stated above; it is not impossible that large quantities of a mixture of alcohol and ether will dissolve minute traces of sulphate of ammonia.

It was evident now that our *Rhus Toxicodendron* does not contain any volatile alkaloid.

Another lot of vigorous leaves was now collected, enclosed in a tin box, and a number of moistened test papers introduced. The next morning, it was observed that the curcuma and red litmus papers were unaffected, but that the blue litmus papers had been colored strongly red. This single experiment was at once a conclusive proof that the exhalations of these leaves contained a volatile acid, and that the poisonous properties were most likely due to it.

These leaves were now bruised with six per cent. of their

weight of slaked lime, and, after maceration with a sufficient quantity of water, expressed, again macerated and expressed, and the liquor reserved for a few days for further investigation.

In the mean time, the residue in the retort from the previous lot was mixed with sufficient sulphuric acid to impart a strongly acid reaction, and then subjected to distillation, the distillate being collected in water containing carbonate of baryta in suspension. *This distillate had nearly the same odor as the distillate obtained by lime*, and the conclusion arrived at before, that the odorous compound was a distinct body, was thereby verified. The distillation was soon stopped, because this product was merely intended for experiments, and to ascertain whether the previous continued heating with lime, had produced a change in the acid or not. During this process, a slight eruption appeared above the wrists on both my arms, but was ascribed to the extremely hot weather. It was treated with subacetate of lead, and no further notice taken of it.

The solution of the baryta salt, thus obtained, was tested with various reagents: nitrate of silver produced a slight milkiness, removable by nitric acid; on standing, a copious black precipitate was obtained; bichloride of mercury, after some time, produced a white precipitate, then supposed to be calomel; bichloride of platinum an extremely slight deposit; chloride of gold, after boiling, a separation of metallic gold adhering to the test tube; acetate of lead, a white precipitate soluble in nitric acid; neutral tersulphate of iron (I had then no neutral sesquichloride of iron on hand), a precipitate of sulphate of baryta and apparently a slight red coloration.

These reactions appeared to be so nearly identical with those of formic acid, that I was almost satisfied that the dreaded poison of the *Rhus Toxicodendron* was the same compound which is generated by the little busy *Formica rufa*.

The expressed liquid, set aside as before stated, was now subjected to distillation, after having been previously mixed with an excess of sulphuric acid. A portion of the distillate was again collected in water, holding carbonate of baryta in suspension; another quantity was condensed by itself, to obtain the pure acid. This acid had a similar odor, as noticed before, but

it changed and disappeared almost entirely on rectifying the liquid over chloride of calcium.

The acid solution, as thus obtained, is colorless, strongly affects blue litmus paper, and neutralizes bases; but the salts with the stronger bases show a distinct alkaline reaction. Added to solution of *acetate* or *subacetate of lead*, the acid produces a heavy white precipitate, which is scarcely soluble in boiling water, but readily soluble in nitric acid; with *corrosive sublimate* and *bichloride of platinum* no alteration takes place even after boiling; *chloride of gold* is in the cold slowly, at the boiling heat rapidly, reduced, and a film of metallic gold deposited; with *nitrate of silver*, no immediate alteration occurred in the cold, but gradually a black precipitate of oxide of silver takes place, which is produced in a few minutes, if the mixture is boiled. This separation of the oxide of silver must be caused by the mutual decomposition of the acids, whereby the oxide is liberated; for, if the acid is boiled with pure oxide of silver, and the solution filtered while hot, it retains the silver in solution. A salt of the new acid produces, in nitrate of silver, a white turbidity, changing to a black precipitate, on standing, or, in a few minutes, on boiling; but entirely removable by the addition of nitric acid.

Protonitrate of mercury is not affected by the pure acid, either in the cold or on boiling; but treated with the solution of a salt of the new acid, a white precipitate is produced, which gradually, but, on boiling, instantly changes black; nitric acid dissolves it readily.

Red oxide of mercury is dissolved by the boiling acid; the solution, filtered while hot, deposits, on cooling, nearly all the salt, leaving, however, enough in solution to affect hydrosulphuric acid considerably. This white mercuric salt is the same as the white precipitate occurring in solutions of a salt of the new acid with bichloride of mercury, and it is not reduced either on standing or by boiling.

Protoxide of lead is readily taken up by the boiling acid, forming a solution of a strong alkaline reaction, which, on cooling, precipitates most of the salt in white flocks, leaving the

liquid decidedly alkaline ; the salt is taken up by dilute nitric acid.

Carbonate of copper dissolves in the boiling acid to a bluish green solution, which forms no precipitate on cooling.

Neutral sesquichloride of iron is not affected in color, either by the pure acid, or by one of its salts.

Permanganate of potassa is readily reduced.

Chromate of potassa is not reduced to chromic oxide, on boiling, either with the free acid or one of its salts.

Comparing all these reactions with those of formic acid, it will be seen that only the behaviour to chloride of gold, and the reduction of metallic gold from the solution are identical ; in the sparing solubility of the lead salt, the two acids likewise resemble each other. This acid has more reactions in common with acetic acid, among the most prominent of which are the slight alkaline reaction of their salts with alkalies and alkaline earths, and the strong alkaline reaction of the (basic?) lead salt.

But the behaviour of this acid and its salts to oxide of silver, nitrate of silver, oxide of mercury, and corrosive sublimate, distinguish it readily from both formic and acetic acid.

Taking all the reactions together, it is, unquestionably, a new organic acid, for which I propose the name of *Toxicodendric acid*.

That it is the principle to which the poison oak owes its effects on the human system, was proved to my entire satisfaction by the copious eruption and the formation of numerous vesicles on the back of my hand, on the fingers, wrists, and bare arms, while I was distilling and operating with it. Several persons, coming into the room while I was engaged with it, were more or less poisoned by the vapors diffused in the room ; and I even transferred the poisonous effects to some other persons, merely by shaking hands with them.

The dilute acid, as obtained by me, and stronger solutions of its salts, were applied to several persons, and eruptions were produced in several instances, probably by the former, though not always, which was most likely, owing to the dilute state of the acid. Whenever this was boiled, I always felt the same

itching sensation in the face, and on the bare arms, which I experience on continual exposure of my hands to the juice of the plant.

As remedies against it, I have tried subacetate of lead, permanganate of potassa and ammonia, the last, I believe, with the best success. Alkaline solutions were first recommended by Prof. Procter, I believe, and, as my experiments show, they are the remedies which, *à priori*, might be expected to afford the greatest relief, just as in the case of formic acid. The eruption produced by this acid is very similar in its nature to the one produced by toxicodendric acid, and its effects yield readily to alkaline lotions. It is not unlikely that, like the formiates, the toxicodendrates are without any ill effects, if applied externally. The reactions of our new acid show, likewise, the reason why permanganate of potassa, subacetate and even acetate of lead may be valuable remedies for this eruption. While the former completely decomposes it, the last named salts produce nearly insoluble precipitates with it; at least, toxicodendric appears to be stronger in its affinities than acetic acid.

The question may now be asked, how Dr. Khittel, in his otherwise carefully performed analysis, could overlook such an important constituent? The answer is partly given in the remarks previously made; the drying and powdering of the leaves must expel a great portion of the volatile poison; but in the course of his analysis, he has removed it from the ethereal liquid by distillation and evaporation with water, and if any should have been left in the then resulting aqueous solution, it was precipitated by sugar of lead, and may have been regarded as phosphoric acid, or may have been mixed with the peculiar tannate of lead.

Not having the original paper at hand, I cannot positively speak on this point, or on the method employed which satisfied him at the start that the plant contained a volatile alkaloid. But I must reiterate that, by his method, I could not obtain it. The juice, however, contains notable quantities of ammonia salt, which are not only shown on the distillation with potassa or lime.

If the juice is expressed with the previous addition of a little

water to the leaves, and then more acidulated with nitric acid, phosphomolybdic acid produces a yellow precipitate which was treated with soda, the distillate neutralized by sulphuric acid, and, after evaporation, treated with alcohol and ether; the residue from their evaporation was minute, and no alkaline reaction of the vapors, when treated with a fixed alkali, could be observed; but the acidulated solution yielded a faint turbidity with phosphomolybdic acid; none with iodohydrargyrate of potassium.

The expressed and acidulated juice gave no reaction with Mayer's test, except after rendering it alkaline by potassa, the behaviour of ammonia.

The residue in the retort, after the distillation of toxicodendric acid, behaved exactly like the juice. The excess of sulphuric acid was removed by neutralizing with bicarbonate of potassa, mixing with twice its bulk of strong alcohol, and distilling the alcohol from the filtrate, when it was tested with both Sonnenschein's and Mayer's reagents with the same results.

The question which I accepted is only partially answered; I have merely proved that the poisonous properties of *Rhus Toxicodendron* do not reside in a volatile alkaloid, but that they are due to a volatile acid. If I state that the dried leaves do not contain a trace of the volatile alkaloid, it is only what might have been expected; but then it was not dissipated; it merely did not exist there previously.

But whether the toxicodendric acid is, to a greater or less extent, lost in drying, I am as yet unable to say; though such a result may be expected. As regards its isolation, it is easily effected. The only questions are whether it could be procured in sufficiently large proportion to be remunerative, whether it is not altered by keeping in its pure state, and whether it possesses any intrinsic value in its medicinal properties. As far as our knowledge reaches, I believe the expressed juice, preserved by alcohol, to be the best pharmaceutical preparation.

Even in the chemical history of this acid, nearly everything is to be found out yet by further researches. If my time permits, I may attempt to prepare it in larger quantities, and in a more concentrated form, and to determine its composition.

Philadelphia, September, 1865.

ON THE PRESERVATION AND DISPENSING OF OINTMENTS AND CERATES.

BY WILLIAM SILVER THOMPSON.

"What are the best vessels in which to dispense ointments and cerates, combining fitness with elegance and accuracy?"

The vessels in most common use for dispensing ointments and cerates, are the common jar and gallipot of earthenware; being convenient and readily obtained, they answer the purpose when the ointment is intended for immediate use only, but the great objection to the material of which these vessels are composed is its porous nature, the glazing not being perfect enough to prevent the absorption of the fatty matter into the body of the jar.

The common turned wood box answers a good purpose for dispensing the ordinary ointments and cerates, and on the score of economy will no doubt continue to be used unless superseded by something quite as cheap, and less objectionable. The difficulty often experienced in pasting the label on the turned box, owing to the porous nature of the wood, is entirely obviated by the application of two or three coats of acetous mucilage or liquid glue, by means of which the pores of the wood are filled and a smooth surface is prepared for the label.

The best vessels in which to dispense ointments and cerates, combining all the requisites of fitness, elegance and accuracy, are undoubtedly of glass. For ointments of very soft consistence, nearly approaching the nature of liniments, a wide mouth vial, fitted with a good cork stopper, answers a good purpose. For ointments of firm consistence and cerates, the flat jar of glass, with accurately fitting cover, made by the New England Glass Company, and probably by other factories, answers every requirement, where the expense of such a vessel is not an objection; and it would probably be brought into general use, if it could be furnished by the manufacturers at a lower price.

Since accepting this query, I have induced one of our glass dealers to introduce a style of jar with tinned iron cover, (a sample of which is now presented), which answers a good purpose,

although objectionable on account of the imperfect manner in which the mouth is finished. This jar of the size presented can be furnished to the trade at about seven or eight dollars per gross.

“What is the best plan for keeping ointments and cerates in the dispensing shop, so as to retard their tendency to oxidation?”

To make an ointment that will keep, it is of primary importance that the materials used should be of good quality, especially lard. This article is sometimes adulterated by an admixture of water, which answers the double purpose of rendering the lard white and increasing its weight. The amount of water introduced varies in proportion, according to the conscience of the operator. This variety of lard should be carefully avoided by the Pharmaceutist, as the ointments and cerates into which it enters undergo oxidation rapidly, and soon acquire a degree of rancidity which is offensive to persons in health, and of course much more so to the sick. What is called leaf lard, prepared at farm houses, and which is used by some Pharmacutists, is undoubtedly the best for preparing ointments; but when this cannot be procured, the article known in commerce as pressed lard, answers a good purpose; being prepared from firm lard in the first instance, it is not liable to the objection of containing water.

Another advantage gained in the use of pressed lard for many ointments is, that the quantity of wax may be considerably reduced, which, on the score of economy, is of some importance; and as wax is used merely to give consistence to the ointment, it is a question whether an ointment prepared from pressed lard is not superior to one into which a large proportion of wax enters, on the ground of being more homogeneous.

The use of benzoin in the preparation of ointments and cerates undoubtedly tends to retard oxidation. It is best used in the form of tincture made in the proportion of four ounces to the pint of alcohol, two fluid drachms of which is sufficient for sixteen ounces of ointment.

Having volunteered the foregoing remarks in regard to the preparation of ointments, it remains to answer the query as to

the best plan of keeping them so as to retard the tendency to oxidation.

It is important that the dispensing jars for ointments should be of material impervious to fats. Jars of French or German porcelain answer this end, and ointments kept in them will resist oxidation for a much longer time than when kept in the ordinary Liverpool or earthenware, which is of a porous and absorbent nature. Whenever the least tendency to oxidation manifests itself, the jar should be thoroughly cleansed by means of strong soap and water, or a diluted solution of potassa or soda.

The position selected for the jars in the shop, should be one in which the extremes of ordinary temperature is avoided, such as a dark closet against a brick wall; near the floor and remote from the stove or heating arrangement. If the cellar is convenient of access, it is preferable for summer use.

By attending to the foregoing precautions, the Pharmacist will have little or no trouble with his ointments and cerates, and will never have to suffer the mortification of being reminded by a customer that he had dispensed a rancid preparation; such, at least, has been my experience in a practice of many years.

Baltimore, June, 1865.

ELIXIR OF VALERIANATE OF AMMONIA.

BY J. FARIS MOORE.

Mr. Joseph Roberts, of Baltimore, having failed to reply to the Query, the following formula is presented as a simple mode of preparing the elixir, which has given satisfaction, and has been adopted by the Maryland College of Pharmacy.

Take of Valerianic acid one fluidounce;

Distilled water twenty-four fluidounces;

Carbonate of Ammonia a sufficient quantity;

Inodorous Alcohol twelve fluidounces;

Simple Syrup twelve fluidounces;

Peach water eight fluidounces;

Saturated Tinct. of Red Saunders four fluidrachms;

Saturated Tinct. of recent orange peel one fluidounce;

Oil of Bitter Almonds five minims ;
Oil of Sweet Orange twenty minims :
Caramel a sufficient quantity.

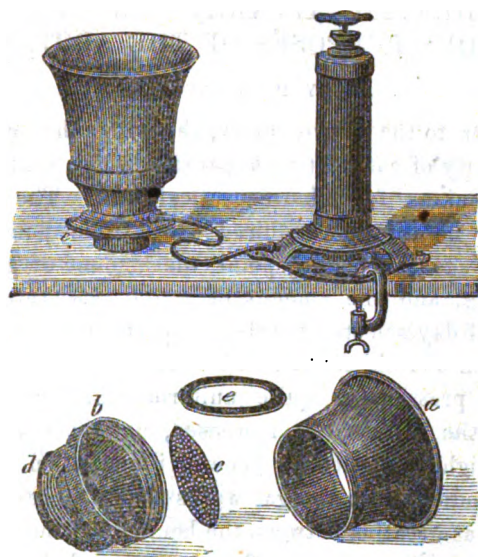
Mix the valerianic acid and the distilled water, and add a sufficient quantity of carbonate of ammonia to saturate the acid; then add the other ingredients, with a sufficient quantity of caramel to impart a brownish shade to the mixture, and filter through paper.

ON A NEW INSTRUMENT FOR THE RAPID FILTRATION OF LIQUIDS.

BY EDWARD PARRISH.

This instrument is the invention of A. B. Spencer, of Rochester, N. Y. Its design is to facilitate filtration, on a small scale, by producing a partial vacuum in the receiving vessel, and thus rendering the pressure of the atmosphere available in forcing liquids rapidly through suitable media. It is made entirely of hard rubber, and is neither corroded by acids or alkaline solutions, nor by alcoholic or ethereal liquids. Although neither the principle nor its application is new, the use of this material in such an apparatus constitutes an important improvement, and the ingenious adjustment of the several parts leaves nothing to desire. The air pump consists of a cylinder, about 2 inches in diameter and 10 inches long, upon a cast-iron base, secured to the table or counter by a clamp; the piston, which works in this with great precision, contains a valve of simple construction. It will be apparent to any one who is familiar with syringes of this material, that it possesses unusual fitness for the purpose; a highly polished surface, with just sufficient elasticity to allow an elastic piston to move easily and yet tightly through its length, makes an admirable air pump. The absence of any liability to dent or bruise in handling, or to fracture by any ordinary application of force, is another recommendation.

The air pump is connected with a funnel by a piece of elastic tube of convenient length. The construction of the funnel is shown in the lower drawing.



The upper section, *a*, has a screw turned upon the outside above its inferior margin; this fits a screw upon the inside of the lower section, shown at *b*; the perforated diaphragm *c*, of hard rubber, is designed to be covered with several layers of filtering paper or cotton cloth, or with chamois leather, or other filtering medium, which is secured tightly in place by the pressure of the upper section *a*, when screwed upon the lower section *b*; at *d* is shown a nipple, on to which the elastic tube is slipped to connect the funnel with the air pump. A washer, marked *e* in both figures, serves to make an air-tight joint with the receiving bottle into which the funnel is designed to be set; this may conveniently be a quart salt-mouth bottle, if the quantity of liquid does not exceed that measure, but as there is little difference in the width of the mouth of the several common sizes, it may be adapted to almost any of them.

Beside the uses which will suggest themselves to the pharmacist, this instrument is admirably adapted to the purposes of the photographer, whose baths frequently become cloudy and occasion long delays in the execution of his orders.

ON GAS HEATING APPARATUS, ADAPTED TO THE
VARIOUS PURPOSES OF THE APOTHECARY.

BY P. W. BEDFORD.

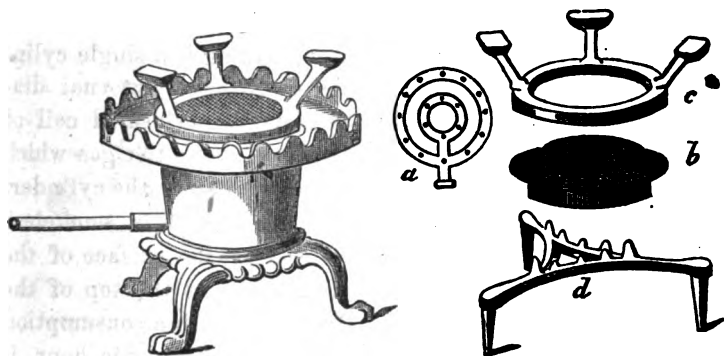
In answer to the above query, the writer has experimented with a variety of gas heating apparatus, which are recommended by their makers for Pharmaceutical use. The experiments were based on the time required to heat four pounds of water from 40° F. to the boiling point, the amount of gas consumed in so doing, and the amount of water evaporated per hour. The time of day selected for these experiments was between the hours of ten o'clock, A. M., and four, P. M., as between those hours the pressure is quite uniform, while, as the evening advances, the pressure is increased, until between the hours when gas light is needed for general illumination and midnight, when the indicator at the gas works shows a pressure of about four times as great as between the hours when these experiments were made. The amount of gas consumed by the furnaces during the hours of increased pressure is quite constant at fifty per cent. more than during the day.

The gas pipe to which the furnaces were connected was of $\frac{3}{4}$ inch diameter, and with an average escapement of 14 feet of gas per hour, during the day. In speaking of the consumption of gas with the various gas heaters, it can only be stated indefinitely; for the same apparatus will consume unequal amounts, according to the pressure (and, perhaps, the quality) of gas. I have, therefore, stated that, when burning a certain number of feet per hour, certain results were obtained. This is necessary; for I have noticed that the same apparatus would one day, at a certain hour, burn eight feet, while, at the same hour on another day, nine and a half or ten feet would be consumed. The vessel in which water was heated to the boiling point was a closed copper kettle of six pints capacity, provided with an escape tube for steam, and an opening in which a chemical thermometer was fitted. For evaporation of water, an ordinary evaporating dish of one gallon capacity was used, the water introduced at the boiling temperature, and after maintaining the heat of the furnace for a few minutes, the whole apparatus

weighed, and at the expiration of half an hour, the apparatus weighed, and amount of loss observed. In order that side currents of air should not interfere with accuracy, the apparatus was surrounded by a jacket formed of sheets of tin, jointed in such a manner that, when not in use, they can be folded up flat.

Seven various furnaces were used in these experiments, and they may be designated as Parrish's, Luhme's, Bullock & Crenshaw's, Bunsen's Crown Burner, Shaw's, McGlensey's, and a French gas furnace.

The gas furnace supplied by E. Parrish is a cast iron cylinder, in which a perforated coil of tube (*a*) supplies the gas



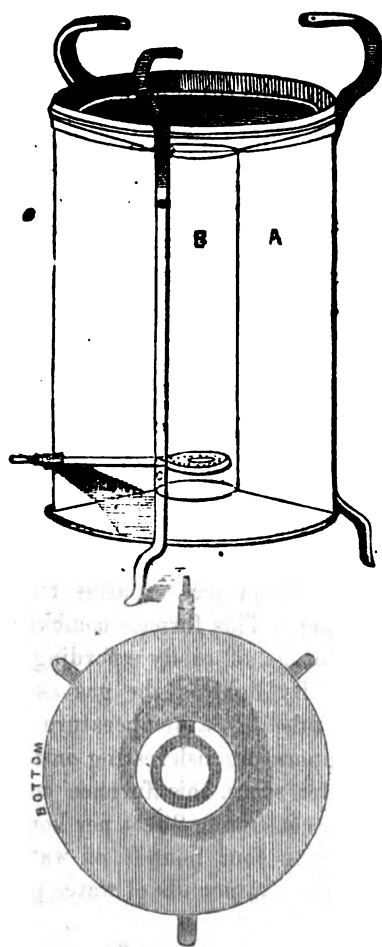
for combustion, which, if heat sufficient to boil liquids is required, is lighted upon the surface of the wire gauze (*b*), where a mixture of gas and air is burned, the projecting arms from the upper rim (*c*) supporting the vessel. This furnace combines with a high temperature the advantage of easily affording a low or very moderate temperature. By lighting the gas as it issues from the perforated coil of tube (*a*), a temperature of 100° F. can be maintained in an evaporating dish resting on the arms (*c*). Under the ordinary day pressure, this furnace consumes $7\frac{1}{2}$ to 9 feet per hour. When consuming 8 feet per hour, it requires seventeen minutes to raise four pounds of water from 40° F. to 212° F., and evaporates $2\frac{1}{2}$ pounds of water per hour.

This excellent furnace has one disadvantage. The space between the perforated coil and the wire gauze is so short, that

there is not sufficient admixture of air with the gas to produce a smokeless flame, and, as a consequence, the vessels are badly smoked on the outer surface. In other respects it is an excellent apparatus.

Luhme & Co., of New York, have recently introduced an excellent apparatus, somewhat similar in principle. It consists of two sheet-iron cylinders, the outer one (A) 9 inches high and

6 inches diameter; the inner one (B) 7 inches high and 2 inches diameter, the cylinders being connected at the extremities by enclosing the space between them with sheet iron, making it a single cylinder of 2 inches internal diameter. A perforated coil of tube (c) admits the gas which mixes with air in the cylinder, and burns with a smokeless flame from the surface of the wire gauze at the top of the furnace. With a consumption of 8 feet of gas per hour, it requires 16 minutes to raise 4 pounds of water from 40° F. to the boiling point, and will evaporate 2½ pounds of water per hour.



By lighting the gas as it issues from the perforated coil (c), as moderate a heat as 90° F. can be steadily maintained, thus dispensing, in many cases, with the necessity of an air or water bath. By a recent improvement added to it, (not shown in the figure,) consist-

ing of a short cylinder, whose lower end fits in the central cyl-

inder (B), and the upper end made sufficiently large to be lined with black lead and holding a small crucible, portions of chemical and mineral substances can be readily fused. In fact, this furnace possesses the greatest range of temperature of any I have seen, and is the most satisfactory I have used.

Bullock & Crenshaw make an excellent gas furnace on the pattern suggested by J. J. Griffin, and described in detail in the American Journal of Pharmacy for 1862, page 46. It is also figured and described on pages 885 and 886 of the U. S.

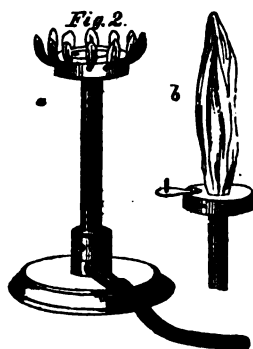
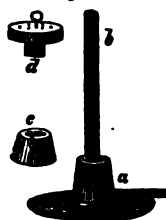


Fig. 4.



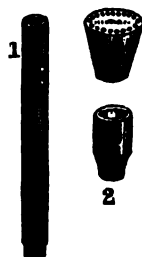
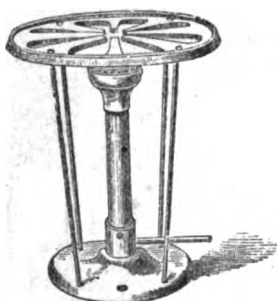
Fig. 1.



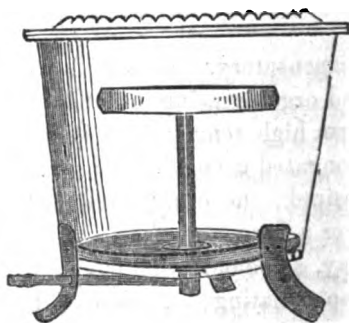
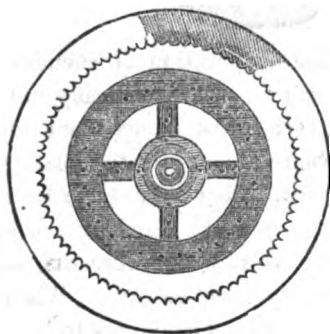
Dispensatory. It is well adapted for evaporation of chemical and organic solutions and other purposes, where a steady uniform high temperature is needed. It has two flames: one an elongated cone which answers well where a concentrated heat is desired; the other, a circular jet flame, which diffuses the heat over a larger surface. A sheet iron cylinder, lined with fire-clay, surrounds the flame, protecting it from side currents, as also radiating a portion of heat from its own surface. When consuming 8 feet of gas per hour, it requires 17 minutes to heat 4 pounds of water from 40° F. to the boiling point, and will

evaporate nearly 8 pounds per hour. It is not as well adapted for low temperatures as either of the preceding furnaces.

Bunsen's Crown Burner is an apparatus similar to the preceding, but of much smaller dimensions, and is not furnished with the jacket or cylinder to protect the flame. When consuming 5 feet of gas per hour, it requires 30 minutes to heat 4 pounds of water from 40° F. to the boiling point, and evaporates nearly 2 pounds per hour. For the smaller operations of the apothecary, it is the best apparatus made.



A modification of the Bunsen burner is made by McGlensey, of Philadelphia. The one used was one kindly loaned me by my friend J. M. Maisch, of the U. S. A. Laboratory of that city. Its average consumption of gas was 3 feet, requiring 48 minutes to heat 4 pounds of water 170° F., and evaporating 1 pound of water per hour.



Through the kindness of Dr. E. R. Squibb, I was furnished

with an excellent furnace of a French pattern. This is quite similar to many of the gas furnaces used several years ago. It is simply a perforated coil of tube, as shown in the annexed engraving, the gas being ignited as it issues. An outer jacket serves as a support for the dish or other vessel, as also protecting the flame from side currents of air.

When consuming $3\frac{1}{2}$ feet of gas per hour, it requires 40 minutes to heat the same amount of water as in the other experiments, and will evaporate $1\frac{1}{2}$ pounds of water per hour. For a continuous low heat or evaporation, this furnace answers an excellent purpose.

W. F. Shaw, of Boston, furnished me with a variety of his gas stoves; but as they are all on one general principle, but two of them were tried. The flame is of mixed gas and air, an inch in diameter at the base, and about six inches high. For domestic purposes, this apparatus is admirably adapted by the many convenient modifications furnished with it, but is not one that can be recommended for general use for the apothecary. The flame impinges on one particular portion of the vessel above it, rendering it liable to fracture or flaking. This is the experience of a number of my friends who have used them. The results of similar experiments, as with the other furnaces, are as favorable as any.

In closing this paper, the writer would state that differences will be noticed in the amount of gas consumed by any furnace at various hours, and this depends upon the pressure at the works, as also the consumption for various purposes, and, therefore, he has stated the results of these experiments when consuming gas at a definite amount per hour. The statements also show that it requires about $2\frac{1}{2}$ feet of gas to heat 4 pounds of water from 40° F. to the boiling point, and that, in regard to economy, there is no choice among the various apparatus alluded to in this paper. In regard to convenience and usefulness, the furnace made by Luhme & Co., of New York, is to be preferred as combining the greatest range of temperature and adaptability to the wants of the apothecary. There are some few operations in which it cannot be used as well as some of the others, such as manipulating with glass tubes, and for this purpose the Bunsen's Crown Burner will furnish the only addition in gas apparatus necessary for the ordinary operations of the Pharmacist.

ON THE SEEDS OF *CIMICIFUGA RACEMOSA*.

BY EDWARD C. JONES.

At the last annual meeting at Cincinnati, I accepted the following question, viz: "The Seeds of *Cimicifuga racemosa* are numerous and easily obtained. What are the characteristic properties and chemical constituents?"

These are in some districts very easily obtained, but after accepting the question last year I was most too late to get sufficient for my use, but I hope enough to prove the chemical constituents and describe the appearance of them. They are small and flat, ten seeds contained in a pod; and they ripen between the latter end of 8th (August) and 9th (Sept.) mos., and are of a light brown color externally and whitish within. The odor is very nauseating in the fresh state, but by drying becomes imperceptible although peculiar and disagreeable to me; the taste is slightly bitter and astringent, leaving a sense of acrimony in the throat after chewing.

They yield their virtues to boiling water and diluted alcohol and ether.

Chemically: after making a decoction and precipitating with sulphate of the sesquioxide of iron, it gave a black colored precipitate, and with solution of gelatin a whitish flocculent one, proving the presence of tannic acid. After filtering the liquid in which I obtained the tannic acid and adding solution of sulphate of sesquioxide of iron, it gave a blue black, as in the case with the last experiment, and to another portion which gave no precipitate, showing it contained gallic acid. I evaporated the last solution after obtaining the gallic acid; it gave a dark colored extract insoluble in alcohol and ether, and readily soluble in water having a sweet taste. Not precipitated by subacetate of lead, proving that sugar is present.

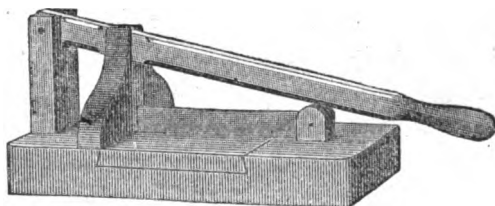
I made a concentrated tincture, and throwing into luke-warm water, obtained an impure resinous principle; this was wholly soluble in alcohol and partly in ether, having a very bitter taste.

A quantity was acted on by ether, and having stood for some time, and being filtered and evaporated, it produced a greasy stain upon paper and being insoluble in alcohol.

To another portion I applied the iodine test ; it gave the characteristic blue color proving the presence of starch as one of the ingredients ; having placed some of the bruised seeds in water in a distillatory apparatus, the water that came over was quite opaque, having the peculiar odor, but was not in sufficient quantity to come at any conclusion.

I added pure alcohol to a decoction causing a precipitate indicating gum. I burnt a portion of the seeds, and obtained a small quantity of ashes, and treated a small portion with sulphuric acid until effervescence ceased, and added some water to dilute the solution, and by ferrocyanide of potassium giving a dark color, and sulphocyanide of potassium a blood color indicating iron.

Another portion with muriatic acid, filtering and on adding oxalate of ammonia giving a white cloud, proved the presence of lime. From the foregoing experiments I found that it contained tannic, gallic acid, sugar, gum, starch, fat, two resins, one soluble in alcohol and ether, and the other only in ether, and salts of potassa and lime.



THE CHAPIN HERB CUTTER.

[(*For cutting pressed Herbs, Tobacco, &c.,*)]

BY HENRY W. LINCOLN.

The original of this simple machine, the cut of which is given above, was made for the writer by Mr. S. P. Chapin, who was in his employ in 1846. There was no machine then in the market which was at all applicable to the purpose, and at the writer's request Mr. Chapin planned and made a cutter which has been in use ever since. The one from which the above cut was taken, was made the past summer by a carpenter, and a

few minor improvements added. It will be found to be a very useful instrument, and being made almost entirely of wood, will not be liable to get out of order. The wood cut will explain itself without need of much description. It will be seen that the knife cuts with a double lever, and makes a clean, square cut. Where herbs are properly pressed, and do not contain many stems, small packages of them can be done up very compactly and handsomely. A specimen of this cutter was exhibited by the writer at the meeting of the Association in Boston, and by request this short account of it has been made, and a cut of the machine furnished.

VOLUNTEER REPORTS AND ESSAYS.

REMEDY FOR EPILEPSY.

BY GEORGE C. CLOSE.

A few months since, a copy of a recipe—said to be a remedy for epilepsy, and which had been put up by a New York firm, somewhat celebrated for their specialities—was handed to me, with a request to state my price for compounding it.

I did so, and returned it to the person who handed it to me. Soon after, I received from two independent sources copies of what I know to be essentially, and believe to be precisely, the same recipe, with the intimation that it was of French origin.

The reason I now call the attention of the Association to this matter is, that I am informed that the firm mentioned above, and whom, for the sake of a name, I will call Jones, Smith & Co., are now advertising this article as their remedy for epilepsy.

I therefore wish to make the recipe public, so that when Jones, Smith & Co.'s. remedy for epilepsy is inquired for, members may tell their customers, if they choose, that the recipe has been published, and is not the property of the pretended owners. This I think will have a tendency, as it were, to "cut the corners" of quackery, which I believe is a legitimate object of this Association.

I have put up this recipe a large number of times, and am informed by one of my customers that it has proved an effectual remedy in his case.

It is as follows:—

R

Potassii bromidi,	.	.	.	3vi.
Ammonii bromidi,	.	.	.	3ii.
Potassæ Bicarb,	.	.	.	gr. xv.
Aquæ,	.	.	.	3iii.
Tinc. Columbæ,	.	.	.	3iss.

m.

Dose, a teaspoonful three times a day.

THE OBLIGATIONS OF PHARMACEUTISTS IN RESPECT TO THE INSTRUCTION OF THOSE IN THEIR EMPLOY.

BY THOMAS S. WIEGAND.

In an address of some length, issued by our Association in 1854, and addressed respectively to Pharmacutists, their assistants, and those just commencing the study of the business, most of the arguments for a thorough professional education are so clearly presented that it would seem almost unnecessary to call the attention of the Association to the subject; since that time, however, changes have taken place which render this subject one of increasing interest.

The causes, then merely incipient, have since assumed a much greater importance, and portend changes still more injurious than they have yet occasioned.

Manufacturing Pharmacutists and others called chemists, responsible to no authority other than their own opinions of right, are steadily enlarging the classes of their productions, till the preparation of many of the pills, powders and tinctures, to say nothing of extracts, both solid and fluid, are scarcely thought of in some stores of well established reputation; that such facts must be admitted, is humiliating in the extreme to every one who feels an interest in the cause of Pharmacy; nor can any reasonable hope of improvement among the large majority of our pharmacutists be entertained until the responsibility of every pharmacutist conducting an establishment, either his own or another's, to give thorough practical instruction in all the different departments of work essential to the facture of the various remedies in which he deals, is fully admitted and conscientiously adopted as the rule of his store.

Among the causes that have produced this tendency of our profession to that of a mere trade, are the systematic efforts of manufacturing pharmacutists urging their products upon the attention of the public, and especially the medical profession, thus creating in many instances an anxiety on the part of the physician to render medicines "*nice*," when the honest and

skilful dispensing pharmacist knows, from careful experiments, the object sought to be attained is impracticable.

Another, and a fruitful cause of this downward tendency, is the frequent habit of some physicians to prescribe remedies from certain pharmacutists, while others more accessible, equally scientific, and of greatly higher moral standing, are slightly passed by.

These remarks are prompted by no dislike to those who are most largely engaged in these practices, but are shared in by nearly all who have been working most industriously to advance the standing of our profession; some of us here present will recall "thoughts on manufacturing pharmacy," by Prof. Procter, published in our Proceedings for 1858, in which he anticipated much of the trouble and injury our profession has sustained; it is to be regretted that some of the measures he proposed as best calculated to lessen the evils have never been put into general practice, at least so far as I have learned; it is true a general statement is made by some manufacturers of the strength of their products, but this will give but little satisfaction to one who is conscientiously endeavoring to dispense what is prescribed by our standard; but were all the precautions recommended by Prof. Procter adopted fully, it still leaves the great injury, which it is my object to hold up to your severest condemnation, as operative as ever. I mean the deprivation of pharmaceutical students of the opportunity to prepare the various tinctures, solutions, extracts and other galenical preparations of our pharmacopœia, as well as the degradation of our profession before alluded to. Did the old-fashioned system of apprenticeship still prevail, legal redress might be had by those "*bound*" to learn the business; but this has been long ignored.

The remedies for these evils lie almost entirely with ourselves, and upon their faithful adoption the future standing of our profession greatly depends.

First of all, we must insist upon every student having an education sufficiently liberal to enable any one to acquire the scientific portions of our business from the treatises written thereupon; without certain educational attainments it is almost

in vain to expect that an apprentice or a pharmacist will pursue the elaborate investigations by which our stock of knowledge is to be increased and our scientific position advanced.

The next means to be used is the honest, undeviating obedience to our standards, by preparing the various articles we are called upon to dispense, and by selling only those (which, from the nature of the case, must be prepared by the manufacturing chemist) that, with the strictest tests, will prove to be properly made: it is constantly urged that it is *cheaper* to buy than prepare, and much more convenient; while admitting the latter to be true in the sense of being easier to effect larger sales in a given time, it is entirely false, in many cases, that thoroughly good preparations can be purchased cheaper than they can be made: many here will recall an excellent paper by John Faber, of New York, read before our Association, substantiating my statements.

But this is the lowest and meanest point of view from which to regard the question; the reflex action of buying pharmaceuticals, I have shown to be so degrading to us as a profession in opening a wide door to every one who has learned "shop-keeping," to enter in and compete in a profession where competition, if carried beyond just limits, is almost certain injury to the community at large.

Closely connected with this subject is the proper standing of those persons who, having "served their time" in wholesale stores, present themselves for examination as candidates for the honors of our colleges of pharmacy; they may bring excellent recommendations from their employers as regards attention to their duties, industry and general excellence of their habits, and still show by their examinations an unfitness to prosecute the business of dispensing medicines, the only one, alas, they can hope to follow, if their "capital" is too limited to permit them to carry on the same kind of trade their employers taught them.

It is denied that they cannot learn all that is essential in a wholesale store, when the facilities of the lecture rooms of our colleges of pharmacy are open to them; the only reply to this denial is the simple fact that, as a class they do not, while we

freely admit some can do it, because some of them have already succeeded; but the very persons who have been cited as instances of good apothecaries having been brought up in wholesale stores, will all testify to having felt the want of that instruction, the dispensing pharmacist is the proper person to impart.

One thought more may be entertained: Would not our profession be great gainers in having a thoroughly organized system of education, when we remember that the greatest safeguards against errors (which involve legal damages far beyond all our means to meet), are in a full acquaintance with the properties of the articles we are so constantly employing in our hourly duties?

In concluding these hasty thoughts upon so important a subject, I would suggest the propriety of the Association urging, with all its influence, the adoption of some scheme calculated to render the practical instruction of pharmaceutic students a leading feature among our members.

FIDELITY TO THE PHARMACOPŒIA.

BY JAMES W. MILL.

An authoritative standard, by which shall be regulated the preparation and dispensing of medicines, and whose authority shall be universally recognized within the limits of the national domain, in other words, a National Pharmacopœia is to Pharmacy a necessity, felt and acknowledged by all its practitioners; its decennial revision also, owing to the inevitable advance of science during such a period, is regarded by all progressive pharmacutists as equally a necessity.

Guided by no such acknowledged standard of authority, the preparation and dispensing of medicines would be involved in extreme confusion and uncertainty. Like a ship at sea without chart or compass, Pharmacy would drift helplessly on the turbid waters of empiricism, and finally, despite the utmost efforts of its crew, be lost amid the rocks and breakers of quackish pretention, or the sordidness and selfishness of mere trade and

traffic. As the compass is to the mariner, so is the Pharmacopœia to the pharmacist, pointing out to him the course by which to steer his pharmaceutical ship, so as safely to guide it into the haven of professional integrity and material prosperity. Itself, indeed, the creature of Pharmacy, it yet in turn aids greatly in its advancement. A standard for the guidance of pharmacutists themselves, it also furnishes a medium by means of which the physician and pharmacist can understand each other in the writing and dispensing of prescriptions. Compiled by able and conservative minds, it is a safe and trustworthy guide, containing within its pages, as it were in a nut-shell, the concentrated results of many previous years of observation and research, thus supplying to all pharmacutists alike, in a cheap and compact form, the most reliable formulas for the preparation of its various products that science and practical experience have yet devised; fallible, of course, like all human productions, it is none the less entitled to full confidence and support. The Pharmacopœia should, however, be regarded as not simply advisory or recommendatory, but as authoritative, deriving its authority whence all just power is derived—the “consent of the governed”—the great body of Pharmacutists themselves, through their representatives in convention assembled. It is the bounden duty, therefore, of the pharmacist to follow its formulas faithfully to the very letter, neither adding thereto, nor substracting therefrom. It is, however, a fact, well known to all who have looked into this matter, that in the preparation of officinal medicines, the pharmacopœia is by no means thus strictly adhered to; that its formulas, in quite a number of instances, are violated, both by acts of omission and acts of commission. For example: the use of troyweight in compounding is, in many cases, ignored entirely, the common or avoirdupois weight being substituted. In the preparation of opium, the drug, instead of being dried, pulverized and sifted, as directed, is employed in its crude state, no allowance being made for its varying state of hydration. In the preparations of cinchona other and cheaper varieties of bark than the officinal are used, and in the comp. tincture the saffron of the Pharmacopœia is substituted by what is known as Ameri-

ean saffron, an entirely different article. The officinal comp. spirit of ether, or Hoffman's anodyne, is so seldom met with that it may be considered a myth, its place having been usurped by a commercial preparation, bearing little resemblance to it except in name. The spirit of nitrous ether, or sweet spirit of nitre, is habitually sold of different degrees of strength, and the strength of the various simple spirits of peppermint, camphor, &c., is also habitually reduced below the Pharmacopœial standard. The comp. extract of colocynth, as usually met with, is a notoriously inferior preparation, a sad commentary on the danger of swerving from the straight and narrow path of duty. Seidlitz powders and solution of citrate of magnesia, articles of extensive sale, are oftener made by private than by officinal formulæ; and the same may be said of a number of other preparations which it is not necessary to enumerate.

Now, it may be thought by some that these deviations from the Pharmacopœia, with, perhaps, one or two exceptions, are not very serious, and that the character of officinal medicines is, on the whole, pretty well up to Pharmacopœial requirement; it should be remembered, however, that "large oaks from little acorns grow," and that any practice short of strict adherence to the Pharmacopœia must, in a great measure, defeat one of the main objects sought to be accomplished by it, viz., greater uniformity in the quality and strength of drugs and medicinal preparations throughout the country. This loose following of the Pharmacopœia is, of course, not universal, but it is quite too prevalent for the honor and good name of the profession. It is, moreover, a source, at times, of considerable annoyance in our dealings with the public. A customer, having paid more for the same article, apparently, at one place than another, concludes that he has been overcharged and "won't trade there any more," and, doubtless, a desire to conciliate the favor of customers in this regard, so as to secure their patronage, has been the main cause of this cheapening of officinal medicines. But surely any departure from the Pharmacopœial standard of quality and strength, in order to accommodate the pecuniary notions of customers, cannot be justified on any correct principle of mo-

rality, or even of sound business policy, and must, moreover, be regarded as disreputable and injurious to the best interests of Pharmacy. There seems to be even a tinge of dishonesty about the practice, for to sell under an officinal title what is not an officinal preparation can hardly be consistent with any very strict principles of honest dealings. Now, Hoffman's anodyne is not Hoffman's anodyne, nor is laudanum laudanum, nor essence of peppermint even essence of peppermint, unless conforming in quality and strength to the requirements of the Pharmacopœia, to whose terms an exact and definite meaning is attached. Since the last revision of the Pharmacopœia, alcohol has increased so enormously in price that its economical use has become a matter of prime importance to the pharmacist, and various ways and methods of saving it begin to be suggested, as, for example, a modification of the formula for tincture of opium, so that its alcoholic strength shall be only half what it is at present—suggested by George A. Gross, in the July number of the Journal of Pharmacy. Now, however desirable this or similar modifications of other formulas might be in a pecuniary point of view, it must be borne in mind that they cannot, with any proper regard for Pharmacopœial authority, be adopted on private account, but must await the action of the Committee of Revision, which alone possesses the requisite authority to change an officinal formula. In the meantime, it is to be hoped the integrity of the Pharmacopœia may be maintained, and that, instead of suffering further violation, its formulas may be more than ever strictly adhered to. "The cruel war is over," and our thoughts can now run in peaceful channels; faith in Greenbacks rests on the solid rock of the nation's stability, high prices have lost their terror, and become to us "as familiar as household words." The present, therefore, presents a favorable opportunity to cast aside those cheap abominations and subterfuges, which are an insult to the Pharmacopœia and a blot upon Pharmacy's fair name in the eyes of all its conscientious practitioners. Let it be done.

Chicago, Illinois, September, 1865.

AN AUTOMATIC VACUUM APPARATUS.

BY N. GRAY BARTLETT.

It is highly probable that, had the framers of our national Pharmacopœia foreseen the enhanced value of alcohol, many of the official formulas would have been greatly modified, to insure a more economical use of this important menstruum; and in no instance would this modification be more apparent than in the mode and temperature prescribed for the evaporation of spirituous liquids.

These defects have been the means of defeating, to some extent, the objects of the Pharmacopœia; the pharmacist, if he relinquish the preparation of those articles involving a great waste of alcohol, and purchase them of the wholesale manufacturer, neglects one of the most important duties of his avocation, while, if he ignore the authoritative directions in this respect, he establishes a most reprehensible precedent, an act not excusable by the plausible plea that equally efficient preparations are secured by this *alternative*.

The presumption is not unfounded; indeed, it is the conviction of the writer that, as a general rule, spirituous solutions of organic matter evaporated at 120°, 140°, or 160°, and, necessarily long exposed to the combined influences of heat and air, suffer greater injury than would ensue from the use of the water-bath still, the difference of temperature being more than compensated for by the exclusion of the atmosphere and the rapid concentration of the liquid.

Vacuum evaporation, which effectually precludes all danger of oxidation and of injury by an excessive degree of heat, is generally acknowledged to furnish products far superior to those otherwise obtained.

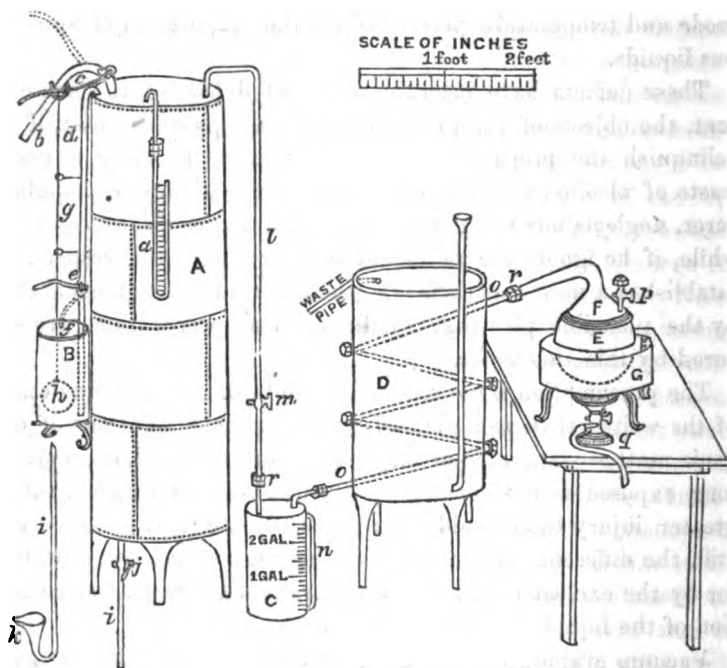
To secure this desideratum by the apparatus at present in use is attended, in addition to the large original outlay, with constant expense; as a consequence it is available only to the extensive manufacturer.

It is the object of this paper to call attention to a new form of vacuum apparatus, one which, it is believed, will recommend it-

self for its simplicity, its comparatively small cost, its automatic action and its inexpensive operation.

This plan was devised by the writer several years since, but it is proper to remark that it has never been put into actual practice.

The peculiarity of the method consists in the means employed for effecting the exhaustion; it is founded upon the well known principle of the Torricellian vacuum. Substitute for the barometric tube of thirty-four inches, one of water of as many feet,



	Dimensions in inches.	Capacity in gallons.
A—Vacuum chamber.....	18 X 60	66.00
B—Reservoir.....	7.5 X 13	2.48
C—Receiver.....	8 X 13.75	3.90
D—Condenser.....	18 X 28	
E—Still, with an eight inch opening.....	Diameter 11	3.82

F—Still head. G—Water-bath. a—Vacuum gauge; a bent glass tube communicating with the vacuum chamber. The closed limb is completely filled with mercury, which also slightly ascends into the other limb. Behind the tube is a scale of inches. b—Hydrant pipe. c—Stopcock, actuated by the float. d—Pipe allowing the egress of the air from the vacuum chamber, and also the escape of surplus water into the reservoir. e—Stopcock, closed by a spring attached to the rod, g. f—Spring. g—Rod connected with the float. h—Float. i—Pipe issuing from the bottom of the vacuum chamber. It is provided with a stopcock, (j) and is thirty-six feet long; its lower extremity being turned upwards and surmounted by the funnel, k. j—Stopcock. k—Funnel-shaped vessel, furnished with a spout. l—Tube connecting the vacuum chamber with the receiver. m—Stopcock. n—Glass gauge-tube, showing the height of liquid within the receiver. oo—Condensing tube. p—Stopcock. q—Gas-burner. rr—Connection couplings.

expand its closed extremity to a large chamber, and the discovery of Torricelli is again available for a practical use.

By consulting the annexed drawing and references, the apparatus will be readily understood; its operation is as follows:

The stopcock, *j*, being closed, cocks, *c* and *e*, are opened, (as shown in the drawing) and water enters from the hydrant pipe, *b*. When the vacuum chamber has become full, water flows through the pipe, *d*, into the reservoir, where it raises the floats, *h*, and shut the cock, *c*. The liquid to be evaporated having been introduced into the still, and the connections being properly made, cocks, *j* and *m*, are opened. The water immediately descends through the pipe, *i*, and at the same time it enters the vacuum chamber from the reservoir; the float, meanwhile, falls, leaving the cock, *c*, closed, (as shown by the dotted lines) and carrying with it the rod, *g*. The spring, *f*, in its descent, fastens upon the lever of the cock, *e*, closing it, (shown by dotted lines.)

Heat is now applied to the water-bath, and, after the lapse of a few minutes, the stopcock, *m*, is shut. A plentiful supply of cold water is made to circulate through the condenser, until the completion of the process.

The flow of water, when admitted to the vacuum chamber, is regulated by the "ball-cock" contrivance, which allows the vessel to be kept constantly full and ready for use, without attention. The reservoir, while it serves as a cistern for the float, provides for the filling of the pipe, *i*, at the commencement of the operation, without the admission of air to the vacuum chamber. When the cock, *j*, is opened water ascends the pipe, *d*, on the principle of the syphon, and, as the capacity of the reservoir is about double that of the pipe, *i*, the latter will have been completely filled before the cock, *e*, is closed by the fall of the float.

The pipe, *i*, being full, the water will escape until it reaches a height corresponding to the atmospheric pressure; this point is, however, some distance below the vacuum chamber, as the column of water, thus supported, would rarely exceed thirty-four feet.

An absolute vacuum is not obtained by this means, because of the ready diffusibility of aqueous vapor, and the escape of air and absorbed gases from the water.

It was feared that the large amount of carbonic acid gas frequently present in this fluid would render it necessary to intro-

duce some absorbent into the vacuum chamber. It was observed, however, that no material depression of the mercurial column arose from this cause; a fact sufficiently explained by the supposition that the escape of the water is so rapid that none of its gaseous constituents can be disengaged.

The confined air diffuses itself throughout the entire apparatus, and as the capacity of the vacuum chamber is ten times that of the still, condensing pipe and receiver combined, but one-eleventh of the original atmospheric pressure is present; a repetition of the process would increase the tenuity of the air to 121 times that of its normal condition.

As the temperature of the water furnished to our cities probably never exceeds 75° , and the tension of its vapor at this degree of heat is equal to but .85 of an inch of mercury, this contrivance is capable, under the most unfavorable circumstances, of producing a degree of exhaustion expressed by less than one inch of mercury.

The vacuum is maintained by the condensation of the vapor proceeding from the still, by an ample supply of cold water to the condenser. If the connections be perfect, distillation will proceed so long as the proper difference in the temperature of the still and condenser is preserved.

The guage-tube of the receiver shows the quantity of the distillate, which indicates approximately when the process should cease.

The still could be made more convenient by the addition of a syphon tube to the cock, *p*, for the purpose of introducing more liquid without destroying the vacuum; a "proof-stick" and a thermometer might be inserted with equal advantage. By employing two vacuum chambers, and a suitable arrangement of floats and valves, the process could be rendered continuous and entirely automatic.

This apparatus would be particularly applicable to the wants of the manufacturing pharmacist.

The fact that it can only be advantageously employed in those localities where water works exists, detracts somewhat from its utility.

Chicago, Ill., August, 1865.

PROPOSED ECONOMY OF ALCOHOL IN PERCOLATION, AS APPLIED TO THE EXTRACTS AND FLUID EXTRACTS OF THE PHARMACOPŒIA.

BY EDWARD R. SQUIBB, M.D.

The increase in the price of alcohol since the last revision of the U. S. Pharmacopœia, has materially interfered with the use of the officinal extracts and fluidextracts, by the greatly increased cost of preparing them, and unless some plan can be found whereby either the cost or the quantity of alcohol may be reduced, it appears probable that these classes of convenient and useful preparations will be disused or debased.

The class of fluidextracts just coming into popular use has already suffered much, both in the way of disuse and debasement, and so little uniformity is there in the character and effects of these preparations, as put forth by different manufacturers, that it is far more difficult than ever before to base any conclusions upon their therapeutic application.

In the case of the solid alcoholic extracts, the cost of the alcohol is often four or five times that of the drug extracted, and not unfrequently amounts to two-thirds of the whole cost of the finished preparation. The present range in the price of alcohol places it at about ten times its former cost, with the certainty of a farther rise to at least twelve times. Under circumstances somewhat similar, the Government of Great Britain has been for some years past engaged in well directed efforts to reduce the price of alcohol for certain uses in the arts, but thus far these efforts have not been of much avail to pharmacy.

It therefore appears more practically useful to seek for an economy in the quantity to be used in effecting the purposes of the Pharmacopœia; and in this direction the present writer determined to make some efforts in the preparation of the following paper. This undertaking was commenced more than a year ago, and has occupied much time and attention, in the hope that results might be attained such as might induce the Committee of Revision of the Pharmacopœia to meet and modify the formulas which the increased cost of alcohol has so seriously affected.

These results, now to be given, have convinced the writer, as an individual member of the Committee of Revision, that a meeting should be called, and the matter seriously considered in regard to this or some better method of remedying an evil which could not have been foreseen.

The general plan of the Pharmacopœia for the preparation of its extracts and fluidextracts, is to exhaust the drug perfectly with an alcoholic menstruum by percolation, and then to drive off the menstruum, in whole or in part, by evaporation.

The plan here suggested, as being under present circumstances an improvement upon this, is to exhaust the drug imperfectly by the menstruum, or only to that point at which the menstruum is of more value than the resulting extract obtained by its use, thus sacrificing the cheaper drug rather than the dearer alcohol. For example, in making the alcoholic extract of belladonna, about 75 per cent. of the total extract is obtained by the use of one-third of the menstruum directed. It follows then, that two-thirds of the total menstruum is required to obtain the last fourth part of the total extract, and it is proposed to save this two-thirds of the menstruum whenever its value greatly exceeds the value of the product to be obtained by its use, and throw away the drug instead. Belladonna leaves of good quality yield about one troyounce of solid alcoholic extract from eight troyounces, by the use of about thirty fluidounces of alcohol. If well managed, three-fourths of this extract is contained in the first eight fluidounces of percolate, and this may easily be obtained by the use of ten fluidounces of alcohol, water being used to push it through. Now, taking the value of the troyounce of finished extract at \$1.25 and the thirty fluidounces of alcohol at 8.5 cents per fluidounce, or \$1.05, three-fourths, or ninety-four cents worth of the extract is obtained by the use of one-third or thirty-five cents worth of the alcohol, whilst the last fourth or thirty-one cents worth of the extract requires twice as much, or seventy cents worth of the alcohol. Thus, by stopping the percolation at the point indicated, thirty-one cents worth of product is lost, but seventy cents worth of alcohol is saved, and this reduces the value or cost of the diminished product obtained, by thirty-nine cents.

The value of three-fourths of a troyounce would then be fifty-five cents, (or $73\frac{1}{2}$ cents per troyounce,) making an economy in value of 58 per cent. due to saving in alcohol over and above the value of the extract lost. This, too, is based upon the assumption that the therapeutic value of the extract is the same from first to last,—an assumption quite contrary to facts obtained in the case of colchicum seed, to be hereafter given.

In the case of the fluidextracts, the problem is by no means so easy of demonstration, and it is to the difficulties attending the application of the same plan to this important class of preparations that this paper is mainly devoted. The alcohol used as directed in the officinal formulas, even when carefully recovered as far as possible by distillation, rarely amounts to less than one-fifth of the total cost of the finished preparation. It often amounts to one-third, and occasionally to one-half or more, and this in operations upon a large scale. In the hands of the dispensing pharmacist the cost is far greater.

The difficulties in applying the proposed plan to this class arise mainly from the necessity that the finished preparation shall bear to the drug from which it is made, the definite relation of a minim for each grain in effective therapeutic value.

A series of preliminary experiments, which it is not necessary to detail, proved very conclusively, first, that in exhaustion by percolation there is a sufficient degree of uniformity of results to admit of the adoption of a model plan of proceeding applicable to drugs in general; second, that the extract or soluble matter yielded to the menstruum is not uniform in its chemical and therapeutic value as obtained during the different stages of the percolation, but diminishes in effective value far more rapidly than the extract does in weight; and, third, that this decrease in value depends upon the difference in solubility between the active and inactive portions of the extract, and that the ratio of this decrease is about the same for drugs in general, provided the proper menstruum be used.

Hence, it became necessary to adopt some one of the officinal preparations as a model, and study it out thoroughly, not only in its pharmaceutical relations, but also in the therapeutic relations involved in its pharmacy. And then, in the light obtained

from such a model, to examine other drugs individually, to ascertain their points of difference or similarity.

In selecting a drug to serve as a model, colchicum seed was adopted, first, because it is an active definite purgative, and its therapeutic value thus easily determined by taking it; second, because its extract can be easily and perfectly dried upon a water bath for weighing, and can afterward be perfectly and entirely redissolved; and, third, because it presented a fair average facility of management in percolation, and represented a large and important number of preparations.

Fluidextract of Colchicum Seed.

The exact quantities of the Pharmacopœia were adopted and nineteen separate percolations with these quantities were made. At first English colchicum seed of good quality, powdered by the writer, was used, but fearing this might not represent the drug most frequently used, it was abandoned, and good German seed purchased in powder, as ordinary pharmacentists would do, was substituted. This change exhibited a very marked difference between these two commercial varieties of the seed, in the proportion of dry extract yielded by different parts of the percolate, this difference amounting to full six per cent. in the earlier portions of the percolate, in favor of the English seed. Whether this difference extended to the therapeutic effect was not tried.

A critically accurate experiment with the officinal formula was then made and examined as a standard for comparison. The pint of finished fluidextract, strictly officinal, was found to contain 1452 grains of solid dry extract, or 89.5 grains to the fluidounce. Of the 1452 grains of extract 1008 or 69.88 per cent. was contained in the reserved percolate, or the twelve fluidounces which first passed through; and 444 grains, or 30.62 per cent. in the final percolate, or the four fluidounces to which the last two pints of the percolate was reduced by evaporation. The results of this experiment occupy the second division of the table given farther on, under the head "Strictly Officinal." The third division of the table gives the results of an experiment with the officinal formula, but purposely made

with less care and skill, and is intended to be such a result as would be obtained by a rather careless, inexperienced, or unskilful operator, and it is supposed that it fairly represents the worst results that could be honestly obtained from any application of the officinal process. The pint of finished fluidextract in this case contained 1417 grains of dry solid extract, or 88.56 grains to the fluidounce. Of this, 945.67 grains, or 66.74 per cent. was contained in the reserved percolate, and 471.83 grains, or 33.26 per cent. in the final percolate, so that it seems hardly possible to get less than two-thirds of the total extract in the first twelve fluidounces of the percolate, or more than one-third in the remainder or final percolate, whilst the first twelve fluidounces is easily obtained by the use of fifteen fluidounces of menstruum, no matter how carelessly applied. One-half of each of these two portions were mixed together to make the officinal fluidextract as directed, and the other half of each kept separated for the trials of efficiency. It was next sought to determine the absolute and relative therapeutic values of the products of this formula, which, from its being carelessly or unskilfully conducted, would give results well guarded against being overstated. These trials of absolute purgative effect when taken, were made upon the writer's own person when in excellent health and upon a well regulated regimen, and sufficient intervals were always allowed between the purgative doses to enable the alimentary canal to resume its natural tone and condition. The doses for each trial were two. One taken at 6.30 P. M., half an hour before the evening meal, and the other at 10 P. M., or three and a half hours after the first, both in a measured quantity of water. When the doses produced no sensible effect throughout the night and day following, forty-eight hours was considered to be a sufficient additional interval before repeating the trial. But when a decided effect was obtained, a week and often two weeks were allowed to elapse before resuming the trials. When there was any reasonable room for doubt the trials were repeated, and therefore the results given are believed to be reliable.

It was first ascertained by repeated trial, that, of the identical powdered seed of which the fluidextract was made, not less than

eight grains at the first dose and ten grains at the second would produce, on the following morning, a distinct decided purgative effect, and this attended with slight nausea and discomfort, which continued throughout the entire day. This, therefore, was adopted as the standard quantity for comparison. Now, the officinal formula for this and other fluidextracts is based upon their representing the drugs from which they are made, in the convenient and definite proportion of a minim for each grain, and this, from the very effective and perfect exhaustion ordered, is doubtless strictly true in a pharmaceutical sense; but whether this is equally true in a therapeutic sense remains to be tried. To determine this, precisely the same number of minims, accurately measured in a narrow pipette, of the finished fluidextract, as of grains of the powdered seed, were taken at the same time of day and under practically the same conditions of regimen, exercise, etc. The purgative effect on the following morning was distinctly and decidedly greater than from the powdered seed, but the nausea was the same, or possibly a little less. The fluidextract, therefore, over represents the drug from which it was made, and this may be reasonably accounted for upon two good grounds. First, the powdered seed is doubtless more perfectly extracted in the percolator than it can be in the stomach; and, second, because the fluidextract is presented to the living surfaces in a liquid form, much better adapted to both prompt and energetic action. This is theorizing, it is true, but the reasoning is after the fact, and cannot change its force.

It next remained to be tried whether the 33 per cent. of the total extract contained in the 25 per cent. of the total fluidextract, constituting the final percolate, was equal in purgative effect to the same quantity of extract contained in the finished fluidextract. That is, the finished fluidextract contained 88.56 grains of dry extract to the fluidounce; the reserved percolate only 78.806 grains; but the final percolate contained 112.88 grains to the fluidounce. Now, if the proportion of dry extract was a measure of the medicinal effect of the liquid which contained it, and was equal in medicinal effect as obtained from all parts of the percolate, then the final percolate, from its larger proportion of dry extract, should be 27 per cent. more effective as a purga-

tive than the finished fluidextract, (as 88.56 : 112.83 :: 100 : 127.4.) That is to say, $6\frac{1}{2}$ and 8 minims of the final percolate should produce a similar effect to 8 and 10 minims of the finished fluidextract, because the two portions of liquid contain practically the same weight of dry extract; and this was the starting point for the trials, but the doses were without sensible effect. They were then rapidly increased until a little more than double the standard dose of the finished fluidextract was reached. This double dose produced a purgative effect on the following day, which was, perhaps, slightly greater than that of the standard dose of the powdered seed, but not greater than that produced by half the quantity of the finished fluidextract. That is to say, it required twice and a half the quantity of the dry extract contained in the final percolate to obtain the effect of that contained in the standard dose of the finished fluidextract. This proves conclusively that the extract obtained in percolating this drug diminishes very rapidly in medicinal or therapeutic value as the percolation advances,—far more rapidly than the quantity or weight of extract obtained does; and also that, while the reserved percolate contains but 67 per cent. of the total dry extract, this 67 per cent. represents a much larger proportion of the total medicinal or therapeutic value of the powdered seed used.

The final percolate, used as above mentioned, was prepared as follows: The whole of the "two pints more of tincture," directed in the officinal formula to be obtained after the reserved percolate, was duly evaporated to the four fluidounces as directed; but it was found that a portion of the extract was precipitated during the evaporation. The evaporation was therefore continued at a low temperature on a water bath until the measure was reduced to about two fluidounces, when alcohol was added to bring it again to the prescribed measure of four fluidounces. By this management the precipitated portion and the oil were all redissolved perfectly, and gave a clear solution, well representing the entire two pints of percolate last obtained. This management of the precipitate, which usually occurs in the evaporation of the final percolate of all drugs, has been often adopted in the preparation of fluidextracts upon the large

scale, and is considered to be an improvement upon the more literal reading of the formulas of the Pharmacopœia, since it avoids the precipitation which occurs not unfrequently from the reserved percolate itself upon dilution with the one-third of its volume of a more watery solution.

The results above stated point directly to the conclusion that the sixteen troyounces of the powdered seed can be safely and certainly percolated to fourteen fluidounces, so that this fourteen fluidounces cannot represent less than fourteen troyounces of the drug, or minim for grain in medicinal value, and this with an unskilful manipulation and a good allowance against overstatement beside.

It was next proved by experiment, that in order to obtain this fourteen fluidounces of percolate, not more than twenty fluidounces of menstruum could ever be required, even by unskilful management, whilst with good management eighteen fluidounces is sufficient, the last portions being pushed through with water. Assuming the twenty fluidounces as the quantity necessary, of the three pints of menstruum to be used in accordance with the official directions, one pint and twelve fluidounces, or 58·8 per cent. is saved. Two-thirds of this saving being alcohol, at 8·5 cents per fluidounce, it amounts to 55 cents upon the fourteen fluidounces, considerably more than the two fluidounces of fluidextract would be worth, beside the saving in evaporating and in the skill and complexity involved in the official process, whilst the product of this simple and easy process is transparent, lighter in color, and likely to be so permanently.

The prominent necessity for economizing alcohol now, beyond what was recognized at the last revision of the Pharmacopœia, points toward the closest possible scrutiny of the official processes, to ascertain if these, as directed, are the best adapted to the rapid and early exhaustion of the drugs by percolation; and this directed the attention of the writer, during these experiments, to some points which appeared worthy of a critical review in this new relation to the increased cost of alcohol. First, it was found that the quantity of menstruum used to moisten the powder before packing, was a matter of much im-

portance. Thus, powdered colchicum seed, in the official quantity, moistened with four, six, eight, or ten fluidounces of menstruum, and packed as well as possible, one after the other, in the same percolator, gave reserved percolates containing 984, 1024, 947, and 786 grains of solid dry extract, thus showing conclusively that the official proportion, namely, six fluidounces, is the best adapted to the rapid or early exhaustion of this drug. The packing is much better and the percolation slower when eight or ten fluidounces are used, but the point of practical exhaustion is attained later, and the difference is more marked the earlier the observation is made in the progress of the percolation. When eight fluidounces of percolate has passed, the difference is very great. When twelve fluidounces has passed, the difference is as above given. When a pint has passed, the difference is smaller, but still notable. After this, the difference becomes so small as to be quite unimportant; and when carried to the extent of the official directions, the exhaustion is practically the same in all.

The form of percolator best adapted to this drug was next examined. Six experiments with each form, conical and cylindrical, all resulted very decidedly in favor of the cylindrical form by a difference of 50 to 59 grains of dry extract in the reserved percolate. If the percolation be carried out to anything like the extent directed by the Pharmacopœia, however, the results are practically the same whichever form be used. But should the formula ever be modified upon the basis of the plan here proposed, the form of percolator to be used should be changed to the cylindrical.

It was found in practice with this drug, as with percolation in general, that much alcohol may be saved by the skilful and judicious use of water to push the last part of the percolate through. The constant quantity of liquid held by sixteen troy-ounces of powdered colchicum seed is from sixteen to seventeen fluidounces; and if this fluid be alcoholic, ten or twelve fluidounces of it may be easily pushed out of it by displacement with water without the smallest risk of admixture of the percolate with the water. In using the official quantity of seed, therefore, it is only necessary to have the menstruum four to six fluid-

ounces in excess of the required percolate when water is used. One precaution, however, is necessary to the best attainable results, namely, that the water be poured on top just as the last of the spirit disappears from the surface. Attention to this point will always save two to three fluidounces of the menstruum, as a small excess will then form a partition, which follows the percolate down, and effectually protects it from admixture with the water. Should the percolation be arrested by the impaction of the surface, which sometimes follows the application of water, as in *ipecacuanha*, it is only necessary to scrape off the impacted or impervious surface, and renew the water from time to time.

In the table upon the opposite page are given the results of some of the percolations of *colchicum* seed made for this paper.

In the first division, the first column indicates the portion of the percolate represented by the figures upon the same line in the next column; these two columns recording an experiment wherein every fluidounce of percolate to the twenty-fifth was tested by evaporation. The table then commences again with a column indicating the portion of percolate represented by the weight of solid extract upon the same line with it throughout the remainder of the table. The "Total" is the sum obtained by the addition of all the portions of dry extract. The "Reserved Percolate" is a repetition of the line above, marked "1st 12 f3." The "Final Percolate" is the whole extract yielded after the reserved percolate; and the "Finished Fluid Extract" is the yield of the finished extract after filtration. It should therefore always fall short of the sum of the weights of extract by addition, but in two instances does not do so. The percolation was in several instances carried beyond the point indicated in the *Pharmacopœia*, to exhibit the rate of exhaustion. This extract consists largely of oil, and, from some crude trials, is probably quite inert. The average may therefore, probably, be safely taken as the weight of the constant quantity of inert matter; and if this constant quantity be subtracted from every weight of the whole series, the remainders will much more nearly represent the medicinal or therapeutic value of the extract. The result of this subtraction, applied to the last experiment of the last parallel, is shown in the final column of the table, as being the

TABLE I.
Percolation of Powdered Colchicum Seed.

No.	Portion of percolate re- presented in next column.	Dry extract yielded.	Portion of percolate represented in the following columns.	PARALLEL EXPERIMENTS.				PARALLEL EXPERIMENTS.				Probable effective ex- tract
				Conical Per- colator.*		Cylindrical Per- colator.		Conical Per- colator †		Cylindrical Per- colator.		
				Dry extract Yielded.	Per centage of total extract.	Dry extract Yielded.	Per centage of total extract.	Dry extract Yielded.	Per centage of total extract.	Dry extract Yielded.	Per centage of total extract.	
1. oz.	grains			grains.		grains.		grains.		grains.		
1....	108-21	1st 4 fluid oz.		424-60	29-715	428-57	29-101	.....	.....	780-84	53-722	732-34
2....	102-10	2d 4 " "		345-23	23-760	375-60	25-805	.....	.....	246-37	16-961	222-12
3....	98-02	1st 8 " "		769-78	52-975	799-17	54-90*	734-16	51-811	1426-10	94-568	1186-62
4....	93-85	3d 4 " "		258-88	16-404	268-08	18-411	211-51	14-928	1027-21	70-673	954-46
5....	88-96	1st 12 " "		1008-09	66-879	1067-25	73-817	945-67	66-737	1027-21	70-673	954-46
6....	84-90	4th 4 " "		141-31	9-715	139-09	9-556	132-98	9-385	171-87	11-825	147-62
7....	78-34	5th 4 " "		89-08	6-131	68-34	4-700	101-12	7-136	71-12	4-893	46-87
8....	71-44	6th 4 " "		58-53	4-028	38-52	2-846	70-93	5-006	40-93	2-816	16-68
9....	64-88	7th 4 " "		41-49	2-845	32-84	2-256	43-60	3-068	32-00	2-243	8-36
10....	57-55	8th 4 " "		29-82	2-052	29-26	2-010	39-26	2-771	28-34	1-960	4-09
11....	50-42	9th 4 " "		30-06	2-066	27-97	1-922	30-55	2-156	26-55	1-848	2-00
12....	45-19	10th 4 " "		27-97	1-925	27-23	1-871	27-60	1-948	28-15	1-937	8-90
13....	39-36	11th 4 " "		26-32	1-812	25-00	1-718	25-01	1-764	26-30	1-810	2-06
14....	35-98	Total.		1452-61	.....	1455-50	.....	1417-03	.....	1453-37	.....	1186-62
15....	31-99	Reserved perco- late.		1008-09	.....	1067-25	.....	945-67	.....	1027-21	.....	954-46
17....	25-19	Final percolate.		444-52	.....	388-25	.....	471-35	.....	426-16	.....	232-16
18....	22-09	Finished Fluid Extract.		1432-03	.....	1466-20	.....	1432-03	.....	1426-10	.....	.....
19....	17-46	In each fluid oz. of Fluid Ext.		89-50	.....	91-54	.....	89-50	.....	89-18	.....	74-13
20....	15-74	12th 4 fluid oz.		24-45	.....	24-28	.....	.....	.....	25-74	.....	.....
21....	13-38	18th 4 " "		.....	.....	22-60	.....	.....	.....	24-18	.....	.....
22....	11-99	14th 4 " "		.....	.....	.....	.....	.....	.....	20-37	.....	.....
23....	10-28	15th 4 " "		.....	.....	.....	.....	.....	.....	22-23	.....	.....
24....	8-19	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....
25....	8-38	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....

probable quantity of extract of average medicinal efficacy yielded from each portion of the percolate represented by it. This final column is headed "Probable effective extract," and 24-25 grains is adopted as the constant quantity, this being below the mean of three evaporations of the 12th four fluid ounces of percolate. This calculation makes the reserved percolate represent 80-48 per cent. of the total medicinal value of the sixteen troy ounces of the drug, and thus is in practical accord with the therapeutic trials.

The third division of the table, consisting of two pairs of columns, shows in the first pair the weight of dry extract con-

* This experiment is strictly official, and is adopted as the standard. See page 204.

† This experiment is official, but less critically so. See page 205.

tained in each successive portion of the percolate in another experiment, and the per centage value this weight bears to the whole of the dry extract contained in a pint of the finished fluidextract. This experiment was made with a conical percolator, and is critically official; and the next pair of columns is a precisely similar and parallel experiment, except that it was made with a cylindrical percolator, to exhibit the differences arising from the form of percolator.

The third portion, of two columns, is the record of the official experiment carelessly and unskilfully made with a conical percolator, the results of which were used in the therapeutic trials of the purgative effect. That is, one-half of the product of percolation was used to determine the dry extract, and the other half for the trials of medicinal effect. The fourth pair of columns of the table is an experiment parallel with the third pair, except that a cylindrical percolator was used, to exhibit the difference in result.

The percolators used in these experiments are so well adapted in size and form to the management of the official quantities that their dimensions may perhaps be usefully given. They are made of stout tin plate well and smoothly soldered. The conical one is 9 inches across the top, and the same in the length of the side down to the outlet, which outlet is $\frac{3}{8}$ inch in diameter. From this outlet projects downward a conical tube two inches long, diminishing in size to $\frac{1}{4}$ inch or less at the extremity. The cylindrical percolator is $3\frac{1}{8}$ inches across the top, $2\frac{1}{8}$ inches across the bottom, and 11 inches long. The bottom is shallow cup-shaped, with a conical tube in the centre an inch long, with a $\frac{1}{4}$ inch opening at the extremity. Both are fitted with close covers, and are used suspended by wire bails or handles attached to opposite ears on the upper rim. When used suspended, they are more easily kept vertical, and the percolation is therefore more uniform. It is beside more convenient and safe than when set upon a bottle.

In concluding the experiments with fluidextract of colchicum seed, it was determined to see how far facts would corroborate the general statement made in the early part of this paper, perhaps somewhat loosely as a matter of judgment or opinion rather

than as an established fact, namely, that the high price of alcohol had tended to debasement as well as to disuse of this convenient class of preparations.

Two bottles of the commercial fluidextract of colchicum seed, purporting to contain one-quarter of a pound each, were purchased from an undoubted source. These were of different manufacture, and the two makers of these fluidextracts together, perhaps, supply four-fifths of the entire demand of the United States for these preparations. The labels of these bottles bear the officinal name in English. One has the sentence, "Dose, 5 to 15 drops;" the other, "Dose, five to twenty drops, gradually increased." The first of these was much lighter in color than the officinal, more fluid, and had a whisky odor, as though made from whisky instead of alcohol. It yielded 15.28 grains of dry extract to the fluidounce, or about one-sixth of the proportion (89.5 grains) yielded by the officinal preparation. This preparation was swallowed in doses gradually increased up to two and a half times the standard dose of the officinal preparation, under precisely similar conditions, without producing any sensible effect whatever, and was then abandoned for want of time to try it farther. It can therefore be at best but little over one-third the medicinal strength of the officinal preparation. This fluidextract was sold to the writer at 90 cents for the quarter of a pound and bottle.

The second bottle is about the color of the officinal, but much more transparent. It contained a small proportion of sediment of a light color, and had a slight odor of caramel, with but little odor of spirit or alcohol. It yielded 114.92 grains of dry extract to the fluidounce, or nearly one-third more than the officinal preparation, and this, in drying on the water bath, became very mucilaginous and tough, as though it mainly consisted of gum, and was wholly unlike the extract from the officinal preparation. For want of time, this preparation could not be tried therapeutically like the others were, by commencing with the standard dose and then increasing, so as to be able to state definitely the quantity that produced no sensible effect. But instead of this, one single dose of $17\frac{1}{2}$ minims at 6.30 P. M. and 24 minims at 10 P. M. was taken, this being nearly $2\frac{1}{2}$ times the standard

dose. This produced a distinct and decidedly greater purgative effect than the standard dose, and a far longer and more distressing nausea. Indeed, the nausea continued for 36 hours, long after the purgative effect had ceased. As a matter of fair judgment or opinion, it may be stated that perhaps less than double the quantity of this preparation would have produced the same effect as the standard dose, and, to be quite secure against overstatement, one and a half times the quantity of the official may be set down as its therapeutic equivalent.

This preparation also cost 90 cents for the quarter pound and bottle, or \$3.60 per pound, including bottle. The first gives evidence of plenty of badly rectified spirit or whiskey in its preparation, and but little colchicum seed. The second gives evidence of little spirit,—just enough to preserve it,—and a deficiency also of colchicum seed, extracted with a menstruum so watery that the mucilaginous part of the seeds was extracted and held in solution in undue quantity. These preparations are both at least 50 per cent. deficient in strength; and one certainly more than 110 per cent. deficient, as judged of by therapeutic comparison with a carelessly made official fluidextract. And yet, upon these preparations, differing between themselves at least 60 per cent. in medicinal value, the general character of colchicum seed as a medicinal agent depends. Any comments upon this condition of the materia medica seems quite unnecessary.

Percolation of Powdered Calisaya Bark.

The next drug taken up for examination was Calisaya bark. Two lots of calisaya bark of five ceroons each are represented in the examination. These were bought at different times, and the lots powdered separately. Both were undoubtedly true calisaya bark,—the official *Cinchona Flava*,—and yet presented as great differences in the manipulation as are ever met with in different parcels of the same article. The first five ceroons, called here, for convenience in designating the two, the "Old Bark," was coarsely powdered; that is, was in the condition officially defined as "moderately fine powder." The second

lot, or "New Bark," was powdered very finely, or as it is commonly sold as powdered bark.

The officinal quantity of sixteen troyounces, or 7680 grains, was taken for each percolation.

Both were percolated in cylindrical percolators with the officinal diluted alcohol, but moistened with different proportions of the menstruum, for the purpose of arriving at the best proportion.

The percolates from the old bark deposited, on standing, much more cincho-tannates and cinchonic red than the new; and the latter made a perfectly transparent fluidextract either with the use of glycerine or sugar; whilst the former would do so with neither of these under any management that could be adopted with the percolates after they had passed. In four instances, the percolation was carried beyond the officinal quantity, and always with the same result, of obtaining a proportion of solid extract, which diminished very slowly; so that the point of absolute exhaustion was never attained. And the percolates to the very last gave precipitates with solution of iodo-hydrargyrate of potassium. It may therefore be stated that here, as in the case of colchicum seed, no reasonable continuation of the process of percolation will absolutely exhaust the substance of soluble matters or of the alkaloids; but that a point is reached, and that always far short of that indicated in the officinal formula, where practical exhaustion is easily and economically attained. It is quite certain, that in this and in all drugs, a large percentage of the extract yielded is medicinally inert and useless; and it is extremely probable, if not proven, that when the menstruum is well selected and well adjusted to the greatest solubility of the medicinally active portion of the extract, that that portion is more easily and more rapidly washed out in percolation; and hence, that the quantity of the active principles in each successive portion of the percolate diminishes in a more rapid ratio than that of the whole extract. For example, calisaya bark may contain on an average four per cent. of its weight of alkaloids in their natural combinations, and this small proportion of the whole is alone medicinally effective, so that all the remainder should be excluded from medicinal use, if that

was practicable. But calisaya bark, by the official process of percolation, yields twenty-two per cent. of its weight of dry extract. It follows, then, that at least four-fifths, or eighty per cent., of this dry extract is inert and useless, and need not be extracted if the remaining fifth, or twenty per cent., could be extracted without it.

Now, if we admit, in order to secure perfectly safe conclusions, that in the percolation the exhaustion of the active medicinal portion of the extract is not more easy or more rapid than that of the inert portion, but that it diminishes in the same ratio, then it is only necessary to subtract eighty per cent. from the weight of extract yielded from each successive portion of percolate to obtain a safe and useful index of the true medicinal value of every stage of the process of percolation. And this once obtained, shows, with something like mathematical accuracy, where the percolation may be stopped to obtain the best and most economical practical results.

The following table (Table II.) presents the results of three experiments with the old bark and one with the new. The first three vary only in the proportion of menstruum used to moisten the powder before packing. The middle proportion, viz., ten fluidounces, is the official one; but the last proportion, namely, eight fluidounces, was found to give the best results, and was therefore adopted in the fourth experiment with the new bark. This experiment with the new bark was repeated three times, and of these, the lowest or least favorable one was chosen for the table. The first column of the table indicates the portion of the percolate represented by the quantity of dry solid extract upon the same line in all the succeeding columns. Then, each of the four experiments has a group of three columns. The first of these three gives the number of grains of dry solid extract contained in the measure of percolate opposite to which it is found. The second column of the group gives the percentage amount of this dry solid extract as calculated from the total extract yielded by the whole four pints of percolate. And the third column of each group gives the percentage amount of actual medicinal value as obtained by subtracting the eighty per cent. of inert extract from the yield of each successive portion of the perco-

TABLE II.
Percolations of Powdered Calisaya Bark.

PORTION OF THE PERCOLATE REFERRED TO.	EXPERIMENT I. Old Bark. Moistened with 6 fluidounces of menstruum.			EXPERIMENT II. Old Bark. Moistened with 10 fluidounces of menstruum. (Official.)			EXPERIMENT III. Old Bark. Moistened with 8 fluidounces of menstruum.			EXPERIMENT IV. New Bark. Moistened with 8 fluidounces of menstruum.		
	Number of grains of dry solid extract yielded.	Per centage of the total extract.	Per centage of actual medicinal value.	Number of grains of dry solid extract yielded.	Per centage of the total extract.	Per centage of actual medicinal value.	Number of grains of dry solid extract yielded.	Per centage of the total extract.	Per centage of actual medicinal value.	Number of grains of dry solid extract yielded.	Per centage of the total extract.	Per centage of actual medicinal value.
1st 4 f.℥	545.35	31.051	6.210	527.10	30.310	6.062	564.70	32.604	6.521	380.05	23.005	4.601
2d 4 f.℥	411.35	23.425	4.685	394.86	22.706	4.541	380.04	21.942	4.388	262.81	15.909	3.182
3d 4 f.℥	956.60	54.476	10.895	921.96	53.019	10.604	944.74	54.546	10.909	642.86	38.914	7.783
4th 4 f.℥	276.15	15.726	3.145	342.26	19.681	3.936	379.38	21.327	4.265	214.66	13.000	2.600
1st 12 f.℥	1232.75	70.202	14.040	1264.22	72.700	14.540	1324.12	75.873	15.174	857.52	51.914	10.383
4th 4 f.℥	202.47	11.530	2.306	192.06	11.044	2.209	188.91	10.907	2.181	192.43	11.648	2.329
1st pint.	1435.22	81.720	16.344	1456.28	83.744	16.749	1513.03	86.780	17.356	1049.95	63.562	12.712
5th 4 f.℥	155.95	8.824	1.765	107.98	6.209	1.242	86.68	4.970	.994	157.24	9.518	1.904
6th 4 f.℥	63.63	3.617	.723	67.41	3.301	.660	40.75	2.353	.471	109.09	6.603	1.321
7th 4 f.℥	30.37	1.729	.346	32.41	1.863	.373	22.60	1.305	.261	123.90	7.500	1.500
8th 4 f.℥	17.59	1.002	.200	21.30	1.225	.245	16.85	.973	.195	77.42	4.686	.937
2d pint.	267.44	15.230	3.046	219.10	12.598	2.520	166.88	9.601	1.920	467.65	28.307	5.661
9th 4 f.℥	12.41	.706	.141	15.74	.905	.181	11.67	.674	.135	48.52	2.937	.587
10th 4 f.℥	10.37	.590	.118	10.19	.586	.117	9.44	.544	.109	24.45	1.450	.296
11th 4 f.℥	8.70	.500	.100	8.71	.500	.100	6.30	.363	.073	15.56	.942	.188
12th 4 f.℥	6.11	.348	.069	7.96	.458	.092	5.93	.342	.068	11.85	.717	.143
3d pint.	37.50	2.141	.428	42.60	2.449	.490	33.24	1.923	.385	100.38	6.076	1.215
13th 4 f.℥	5.74	.326	.065	6.30	.362	.072	5.74	.331	.066	10.37	.628	.126
14th 4 f.℥	3.89	.221	.044	5.74	.324	.065	5.00	.289	.058	8.33	.504	.101
15th 4 f.℥	2.96	.169	.034	4.82	.277	.055	4.44	.256	.051	7.78	.471	.094
16th 4 f.℥	3.52	.200	.040	4.07	.230	.046	4.07	.235	.047	6.85	.415	.083
4th pint.	16.11	.917	.183	20.93	1.193	.240	19.25	1.111	.222	84.33	2.018	.404
Total.....	1756.36			1738.91			1732.50			1652.31		

late. This latter is assumed to be a fair index of the real value of each portion of the percolate. And if it be not a fair index, the error is on the safe side for practical results, as it always should be where accuracy cannot be attained. The medicinal value given in this column is calculated upon the whole amount of the extract yielded, and the numbers therefore indicate also so many twentieths of the total medicinal value. For example, the first four fluidounces of percolate of Experiment I. contains six and two hundred and ten one thousandths per cent. of extract that is medicinal and useful; or six and two hundred and ten thousandths twentieths ($\frac{6.210}{20} = 31.051$ per cent.) of the whole medicinal part of the extract. Hence, the second column, which gives the percentage of the total extract, inert and medicinal together, also indicates the percentage

of medicinal extract alone, since a percentage is the same, whether calculated upon the 1756 grains of total extract, inert and medicinal together, or upon the 351 grains of medicinal extract alone, if the ratios be preserved.

It will be seen by this table, that the proportion of menstruum adopted by the Pharmacopœia for moistening the powder before packing is not the best. Secondly, That there is a remarkable difference in different lots of good bark, both in the progress of exhaustion and, as noticed before, in the character of the percolate in regard to the tendency to deposit less soluble matters, whilst the total amount of extract yielded and the proportion of alkaloids may not vary widely. Length of time seems to have much to do with this tendency to deposit, and possibly may account for the whole difference in this way. The new bark was in very fine powder, and was packed about as tightly in the percolator as the old. This caused it to percolate much more slowly; indeed, it percolated extremely slow,—was more than 48 hours in starting, and then gave about eight fluid-ounces in 24 hours. Under these circumstances, we may suppose that the menstruum, which became saturated with the less soluble matters, had time to deposit them again before escaping as percolate. The percolate might thus remain clear, as this did, and this process of solution, deposition, and resolution in the mass, would naturally postpone the final exhaustion of the powder, and distribute the extract obtained through a larger portion of the percolate, without materially affecting the total amount of extract, as really happened in the case of this bark, let the cause be what it may. These conditions and circumstances would not obtain in any known case, except that of cinchona bark, and therefore this is a good example of the most precarious and unfavorable application of economical percolation. Thirdly, That under ordinary favorable circumstances, the first 12 fluidounces, or the reserved percolate in calisaya bark, contains over 75 per cent. of its total value; the first pint over 86 per cent., and the first two pints over 96 per cent.; and that the remainder is very dearly obtained at the expense of two pints of menstruum. And, finally, other percolations of these barks, in connection with those recorded here, show that slight variations in management

do not materially interfere with the uniformity of the general results.

Starting from these experiments with colchicum seed and calisaya bark, thus studied out in detail with care, other drugs were extracted by percolation in a similar way. These were Nux Vomica, Gentian, Alexandria Senna, Short-leaved Buchu, and Cimicifuga. The writer has neither time nor opportunity for a series of details in connection with these drugs, such as would be interesting and might be useful, but must be contented with giving the results of the fractional percolations in a tabular form. This is the less to be regretted since any one can draw the deductions from the facts when stated. For convenience of review, the corresponding results from the tables of colchicum seed and calisaya bark are recapitulated in this general table :

TABLE III.
General Results of Official Percolations.

DRUG REPRESENTED.	MEASURE USED.	Total measure of percolate directed and obtained.	Total number of grains of dry extract contained in the total percolate.	Percentage of dry extract yielded by the drug to the official process.	Percentage of the total extract contained in the first 6 fluid-ounces of percolate.	Percentage of the total extract contained in the first 12 fluid-ounces of percolate.	Percentage of the total extract contained in the first pint of percolate.
Nux Vomica.....	Alcohol.....	60 fluid ozs.	866	11	64	66	72
Colchicum Seed.....	{ 2 measures Alcohol } { 1 " Water }	44 "	1417	18	52	67	76
Short-leaved Buchu.....	Alcohol.....	44 "	1024	18	50	62	71
Alexandria Senna.....	Diluted Alcohol.....	48 "	2384	31	47	64	76
Cimicifuga.....	Alcohol.....	24 "	524	7	63	74	82
Cimicifuga.....	Diluted Alcohol.....	32 "	884	12	59	78	83
Gentian.....	Diluted Alcohol.....	44 "	2573	33	43	61	77
Calisaya Bark.....	Diluted Alcohol.....	64 "	1739	23	53	73	84
Do. do. New, slowly percolated.....	Diluted Alcohol.....	64 "	1652	22	39	52	64

The drugs selected afford examples which embrace all the important differences of condition met with in the Pharmacopœia; and those most difficult to manage were preferred. Thus, two examples of seeds were selected : one wherein alcohol is directed

as the menstruum; the other, a mixture of alcohol and water. Two examples of leaves: one requiring strong alcohol, the other diluted alcohol. Two examples of roots: one requiring both strong and diluted alcohol, the other diluted alcohol. One example of bark was considered sufficient, as it is the most difficult of all to manage well.

The quantities used were strictly those of the official formulas; and the menstrua, and management, and the extent to which the percolations were carried, were also strictly official.

In conclusion, it may be confidently stated, that a very great and important economy in the use of alcohol in percolation may be effected by changing the official formulas which apply to the drugs experimented upon for this paper. And it may be fairly inferred, from these experiments, that this economy might be applied to all other percolations of official drugs. Should the Committee on Revision of the U. S. Pharmacopœia think the subject of sufficient importance to warrant a change in the official standard before the next decennial revision of 1870, or, practically, say 1872, we shall doubtless hear from that Committee on the subject.

Should we not hear from them in a legitimate and authoritative way, the writer of this paper earnestly forbids the use of the results here given, as indicating any short cut or justifiable economy whereby the official formulas are to be evaded or substituted. There can be but one standard, and there can be but one kind of honesty to that standard, namely, faithful obedience and truthful accuracy.

Brooklyn, September, 1865.

NATIVE WINE FROM THE GARDEN RHUBARB PLANT.

BY FREDERICK STEARNS.

An enterprising gentleman, of Belvidere, Illinois, Mr. J. R. Mudge, having introduced into market, during the last four or five years, a new native wine, made from the garden rhubarb, I offer the following in regard to its culture and manufacture, as obtained from him.

The growth of the plant for wine making was commenced in 1858, from what is termed the "strawberry variety," and has been continued ever since with continually increasing crop. The first crop was 1500 gallons, from that to 4000 gallons in 1864, while this season's crop is over 10,000 gallons.

When mature, the plant being cut, the juice is expressed, just as corn juice is obtained, and an equal bulk of water being added, with seven pounds of sugar to each gallon, is passed through two vinous fermentations. When three years old, it is fit for market. Its alcoholic strength varies from seven (7) to ten (10) per cent., according to its age.

Its flavor is pleasantly vinous, sweet, and similar to foreign sherry. Its peculiar medical value lies in an aperient property, aside from its alcoholic tonic power, a gentle movement of the bowels usually following its free use.

It is marketed by Mr. Mudge in glass, and in 10, 20, and 40 gallon casks. Value, \$3 per gallon.

Detroit, Sept. 1, 1865.

THE CROP OF OIL OF PEPPERMINT IN MICHIGAN.

BY FRED'K. STEARNE.

Referring to a paper on the culture and production of oil of peppermint presented to the Association a few years since, I beg now to offer the following statistics in regard to the annual crops for the four years of the rebellion.

The figures refer only to St. Joseph's County, the small quantity produced in a few other counties, on isolated plantations, not tending to increase them materially :

The crop for 1861,	.	.	.	.	15,000 lbs.
" " 1862,	.	.	.	.	18,000 lbs.
" " 1863,	.	.	.	.	24,000 lbs.
" " 1864,	.	.	.	.	11,000 lbs.
Average value per pound, 1861,	.	.	.	.	\$2.25.
" " " " 1862,	.	.	.	.	2.75.
" " " " 1863,	.	.	.	.	3.00.
" " " " 1864,	.	.	.	.	5.00.

1861, '2, and '3, were favorable years for its growth, and the enhanced price led to a greater production; while 1864 was more unfavorable; the drouth affected it, and there was not so much mint set on account of the scarcity of laborers.

Mint farmers, who would grow from 30 to 60 acres, now grow 5 to 10, though there are occasional large growers.

The quality of the oil averages about the same as indicated in the former paper; if any change, it is for the better.

The crop for 1865 promises to be still smaller than for 1864. Much of the mint was winter-killed; there was less new mint set than usual, and a worm has made its appearance which destroys it.

The growth of corn and other great staple products yielding more profit, afford indication that the growth of acres of mint is gradually, year by year, becoming less.

I have not obtained the average number of acres under mint growth for the four years named, otherwise the *pro rata* value could be given; but while the crop of 1863 was a large yield at a fair price, the crop for 1864 was less than half, at far greater cost for labor, and was spread over almost as much land.

New lands in St. Joseph's County have nearly doubled in value in five years. Labor that was plenty at \$15 per month previous to the rebellion, is now scarce at \$30.

The best of the oil of peppermint of Michigan finds its way into market through the Messrs. Hotchkiss, under their brand; the balance is sold in the New York market, through the commission merchants and brokers.

Detroit, Sep. 1st, 1865

ON THE PHARMACOPŒIA STRENGTH OF BRANDY AND WHISKEY.

BY DR. W. H. PILE.

In examining recently some California brandy, of Perkins, Sterns & Co., said to be a very pure article, I found its alcoholic strength to be but 44 per cent. by volume by a standard Tralles' instrument. This would be equivalent to twelve degrees below

proof. Our national Pharmacopœia gives the strength both of brandy and whiskey as ranging between 48 and 56 per cent. of absolute alcohol.

At first sight the above-mentioned brandy would appear to be but 4 per cent. below the inferior limit of strength. The question here arises, does the Pharmacopœia mean in its definition a percentage reckoned by volume or by weight? This is an important point to be established. As the Pharmacopœia is presumed to be complete in itself, the preliminary remarks were looked over to settle this query. Unfortunately, nothing is there found relating to this subject, and we are left to our own interpretation.

In the New Dispensatory, by Wood and Bache, 11th ed., under the head of Brandy we read that "it contains on an average 53 per cent., by measure, of alcohol of the density .825." Now, as alcohol of this specific gravity contains but $92\frac{1}{2}$ per cent. of pure alcohol, it follows that this brandy, containing but 53 per cent. of $92\frac{1}{2}$ per cent., or 49 per cent., nearly, by volume, is within the limits of the definition given as brandy in the Pharmacopœia, provided percentage by volume is meant.

On the other hand, upon looking at the remarks under the head of whiskey, we find this paragraph: "It should contain from 48 to 56 per cent. alcohol, and its specific gravity, *therefore*, should not exceed .922 at 60° F., nor be less than .904." Now, an alcoholic liquor of these specific gravities will be found, by referring to the table of Tralles, to have a per cent. by volume of from $55\frac{1}{2}$ to 64. This is much greater than the strength of brandy as found above. How is this discrepancy to be avoided? Who shall decide when doctors disagree?

It is unfortunate that the term percentage of alcohol was not determined to mean per cent. by volume, that measure being universally adopted in all commercial transactions, and also by the Revenue Department of our own and other countries. At any rate, the omission to state definitely what the Pharmacopœia intends by the term percentage of alcohol, must render the definitions of brandy and whiskey uncertain in regard to their strength.

METHYLATED SPIRIT AS USED IN ENGLAND.

BY EDWARD PARRISH.

The tax on alcohol in England is about the same as in the United States. No one can sell alcohol without a license, and the license is paid for according to the rent of the house in which it is sold. As a privilege for the benefit of the arts and sciences, the Excise Board, with concurrence of Government, give permission to certain parties, under certain restrictions, to purchase and use strong alcohol with an admixture of methylic alcohol for specified purposes.

To Dr. Hoffman, we learn, is due the suggestion to use one part of wood-naphtha with nine parts of pure spirit, to unfit it for the manufacture of liquors for use as beverages.

This mixing is done by an Excise Officer on the premises of the distiller, and having been so mixed it is sent out still under the surveillance of the Excise. The consumer of methylated alcohol makes application to the Excise Board for permission to use, say 1000 or 2000 gallons of this spirit per annum, stating generally the purpose for which he intends to use it.

A bond is written out if the application is accepted, wherein the applicant binds himself not to exceed the specified quantity, or to use it for other purposes than those specified, under heavy penalty, and two respectable householders must sign along with him as security for the performance of the agreement.

The terms of the statement regarding the use of the spirit may be very comprehensive, such as for pharmaceutical preparations, or for polishes and varnishes. Each licensed consumer is then furnished with a permit book containing say 24 blank permits, signed by the Excise Officer of his district, and when he requires methylated spirit he fills one of these up, addressing it to the distiller who has the government mixer. He, in his turn, fills up a regular Excise permit and sends it off with the spirit. This permit is retained, and shown to the Excise Officer with the "request book," from which the order was sent and which has a counterpart, like a cheque book, on which the name, date, quantity, &c., of each order is entered. If the

two correspond, then he takes away the distiller's permits and likewise compares them on his premises with his permit book, and if the two correspond, then the transaction is satisfactory.

The price of methylated spirit, including the cost of naptha, is from 2s. 10d. to 2s. 11d. per gallon (60° OP,) against 18s. 25d. to 18s. 12½d. for pure alcohol of the same specific gravity.

Methylated spirit is not considered suitable for the preparation of tinctures or other galenical solutions, but it is applicable to the preparation of chloroform and ether. Its chief use is, however, in making varnishes and polishes. By a special license, costing £2. 2s. per annum, the druggist may sell methylated spirit in quantities not exceeding one gallon at a time; but some, who do not take out this license, mix an 'ounce of shellac, or "gum juniper," with each gallon, and sell this as "finish," a name given to it from its use in finishing polishers' work on mahogany and other woods.

CONSTITUTION

OF THE

American Pharmaceutical Association.

PREAMBLE.

Whereas, The advancement of pharmaceutical knowledge and the elevation of the professional character of Apothecaries and Druggists throughout the United States are dear to us in common with all well disposed pharmacutists; and *whereas*, a large portion of those in whose hands the practice of pharmacy now exists, are not properly qualified for the responsible offices it involves, chiefly by reason of the many difficulties that impede the acquirement of a correct knowledge of their business:—

Therefore, We, the members of a Convention now met at Philadelphia, [September, 1852,] composed of Apothecaries and Druggists from different sections of the Union, and from all the Colleges and Societies therein existing, with the object of deliberating on the condition of our profession, do hereby resolve and constitute ourselves into a permanent Association, to meet annually, at such times and places as may hereafter be determined, for more effectually accomplishing the objects for which we are now assembled, and do now adopt the following

CONSTITUTION.

ARTICLE 1.

This Association shall be called the American Pharmaceutical Association. Its aim shall be to unite the educated and reputable Pharmacutists and Druggists of the United States in the following objects:

1st. To improve and regulate the drug market, by preventing the importation of inferior, adulterated or deteriorated drugs, and by detecting and exposing home adulteration.

2d. To establish the relations between druggists, pharmacutists, physicians and the people at large, upon just principles, which shall promote the public welfare and tend to mutual strength and advantage.

3d. To improve the science and the art of pharmacy by diffusing scientific knowledge among apothecaries and druggists, fostering pharmaceutical literature, developing talent, stimulating discovery and invention, and encouraging home production and manufacture in the several departments of the drug business.

4th. To regulate the system of apprenticeship and employment so as to prevent, as far as practicable, the evils flowing from deficient training in the responsible duties of preparing, dispensing, and selling medicines.

5th. To suppress empiricism, and as much as possible to restrict the dispensing and sale of medicines to regularly educated druggists and apothecaries.

ARTICLE II.—*Of the Members.*

Section 1. Every pharmacist or druggist, of good moral and professional standing, whether in business on his own account, retired from business, or employed by another, who, after duly considering the objects of the Association and the obligations of its Constitution, is willing to subscribe to them, is eligible to membership.

Section 2. The mode of admission to membership shall be as follows: Any person eligible to membership may apply in writing, with the endorsement of two members in good standing, to any member of the Executive Committee, who shall report his application to the said Committee.

If after investigating his claims they shall approve his election, they shall, at the earliest time practicable, report his name to the Association, and he may be elected by two-thirds of the members present, on ballot.

Section 3. No person shall become a member of this Association until he shall have signed the Constitution, and paid his annual contribution for the current year. All persons who become members shall be considered as permanent members, but may be expelled for improper conduct by a vote of two-thirds of the members present at any annual meeting.

Section 4. Every member shall pay in advance into the hands of the Treasurer the sum of two dollars as his yearly contribution, and is liable to lose his right of membership by neglecting to pay said contribution for three successive years. Members shall be entitled, on the payment of three dollars, to receive a certificate of membership signed by the President, Vice-Presidents, and Secretary, covenanting to return the same to the proper officer on relinquishing their connection with the Association.

Section 5. Every local Pharmaceutical Association shall be entitled to five delegates in the annual meetings, who, if present, become members of the Association on signing the Constitution, without being balloted for.

Section 6. Pharmacutists, Chemists, and other scientific men, who may be thought worthy of the distinction, may be elected honorary members upon the same conditions and under the same rules as appertain to active members. They shall not, however, be required to contribute to the funds, nor shall they be eligible to hold office or to vote at the meetings.

Section 7. Members who have paid their annual contributions for ten successive years shall be considered life members, and exempt from their yearly payments, and entitled to a certificate to that effect.

ARTICLE III.—*Of the Officers.*

Section 1. The officers shall be a President, two or more Vice-Presidents, a Recording Secretary, a Corresponding Secretary and a Treasurer, who shall, with the exception of the Recording Secretary, be elected annually, and shall hold office until an election of successors.

Section 2. The Recording Secretary shall be elected to hold office permanently during the pleasure of the Association; he shall receive from the Treasurer an annual salary and the amount of his travelling expenses in addition to his salary.

Section 3. The President shall preside at the meetings, and administer the rules of order usual in deliberative assemblies. He shall nominate all special committees, except a majority of the members present direct a resort to balloting or other means.

He shall sign the certificates of membership, approve all foreign correspondence, and countersign orders on the Treasurer.

He shall present at each annual meeting a report of the operations of the Association during the year, with such information pertaining to its condition and prospects and the object it has in view, together with such suggestions for its future management as may seem to him proper.

Section 4. In case of the temporary absence or inability of the President, his duties shall devolve on one of the Vice-Presidents in the order of their names.

Section 5. The Recording Secretary shall keep fair and correct minutes of the proceedings of the meetings, and carefully preserve on file all reports, essays, and papers of every description received by the Association, and shall be charged with editing, publishing and distributing the proceedings of the Association under the direction of the Executive Committee. He shall furnish the Chairman of every special Committee with a list of its members and a copy of the minute of its appointment, and shall notify every member of the time and place of each annual meeting. He shall be a member of the Executive Committee.

Section 6. The Corresponding Secretary shall conduct all correspondence directed by the Association, and reply to all communications addressed to it in its recess. He shall from time to time address local As.

sociations, members, and others possessed of information likely to be of interest to the Association, and report such correspondence to the Committee on the Progress of Pharmacy, of which he shall be a member.

Section 7. The Treasurer shall collect and take charge of the funds of the Association, and shall also hold and issue the certificates of membership. He shall pay no monies unless by the order of the chairman of one of the standing or of a special committee, authorized to appropriate funds of the Association, such order to be countersigned by the President.

He shall present a statement of his accounts at each annual meeting that they may be audited. He shall also report to the Executive Committee, previous to each annual meeting, the names of such members as have failed to pay their annual contributions for three years, and also the names of such as have failed to return their certificates of membership after having been officially disconnected with the Association, and duly notified to do so.

ARTICLE IV.—*Of the Standing Committees.*

Section 1. There shall be five standing committees elected annually—Executive Committee, a Committee on the Progress of Pharmacy, a Committee on the Drug Market, each to consist of five members; a Committee on Scientific Queries and a Business Committee, each to consist of three members.

Section 2. The Executive Committee, of which the Recording Secretary shall be one of the members, shall have charge of the revision of the roll, the investigation of applications for membership, and the publication of the Proceedings. They shall report at each meeting a revised roll of members, with appropriate notices of deceased members, also the names of any who, having become disconnected with the Association, refuse to return their certificates of membership as provided by this Constitution.

The annual publication of the Proceedings shall contain the corrected roll of members, full minutes of the several sittings, the Reports of the President and of the Committees, together with such addresses, scientific papers, discussions, notices of new processes and preparations as the Executive Committee may deem worthy of insertion. At least one copy shall be furnished each member of the Association.

Section 3. The Committee on the Progress of Pharmacy, of which the Corresponding Secretary shall be one of the members, shall report annually to the Association on the improvements in Chemistry, Practical Pharmacy and the collateral branches, and on any new works bearing on these subjects published in this country or in Europe.

Section 4. The Committee on Scientific Queries shall report, near the close of each Annual Meeting, a proper number of questions of scientific

and practical interest, the answers to which may advance the interests of Pharmacy, and shall procure the acceptance of as many such questions for investigation as may be practicable, and report before the next succeeding Annual Meeting.

Section 5. The Business Committee shall be charged with the transmission of unfinished business from one Annual Meeting to another, and with collecting, arranging and expediting the business throughout the various sessions of the Annual Meetings.

ARTICLE V.—*Of the Meetings.*

Section 1. The meetings shall be held annually, or as the Association may from time to time determine; provided, that in case of failure of this from any cause, the duty of calling the Association together shall devolve upon the President, or one of the Vice-Presidents, with the advice and consent of the Executive Committee.

Section 2. At the opening of each annual meeting, the President, or, in case of his absence, one of the Vice-Presidents shall call the meeting to order and preside until after an election of officers; in case the President and Vice-Presidents are absent, this duty shall devolve on the chairman of the Executive Committee, or in his absence on any member chosen by vote of those present.

In the absence of the Recording Secretary the President shall appoint a Secretary, *pro tempore*.

The order of business at the first session of each annual meeting shall be as follows :

1st. The appointment by the President of a committee of three persons to examine credentials, and report the names of those duly accredited.

2d. The Executive Committee shall report the names of new members and of persons present recommended for membership, who shall be immediately balloted for.

3d. The roll of those in attendance, as thus completed, shall be called by the Secretary.

4th. The reports of the Standing and Special Committees shall be read by their titles, or in full, and laid on the table for future consideration.

5th. A committee to nominate officers for the ensuing year shall be appointed, consisting of one nominated by each delegation in attendance, and three members appointed by the President, from among those not delegated, to report at the opening of the next session.

The first session shall close with the reading of the President's Annual Report, and referring any portion requiring the action of Committees.

After the first session, the order of business shall be determined by the nature of the subjects presented and by the consent of the majority.

Section 3. During periods fixed by vote for scientific discussion and

the exhibition of specimens and processes, the ordinary rules of parliamentary bodies shall be suspended, but at other times shall be enforced by the presiding officer, from whose decisions, however, appeals may be taken if required by five members, and the meeting shall thereupon decide without debate.

A motion reduced to writing and seconded shall be open to discussion, and while it is before the meeting no motion shall be received unless to amend, divide, commit, to lay on the table; postpone or to adjourn; and a motion to adjourn shall be decided without debate.

On the call of any member, the yeas and nays shall be ordered, when every member shall vote, unless excused by a majority of those present, and the names and manner of voting shall be entered on the Minutes.

ARTICLE VI.

This Constitution may be altered or amended by a vote of three-fourths of the members present at any regular meeting, and notice to alter or amend the same shall be given at least one sitting before a vote thereupon.

Approving of the objects of the American Pharmaceutical Association, I am desirous of joining it in membership; and having read its Constitution, I hereby signify my approval of it, and subscribe to it.

Address _____

I hereby agree to return my certificate of membership in the American Pharmaceutical Association to the Treasurer of that body, if I shall hereafter cease to be connected in membership with it.

TESTIMONIALS.

The undersigned being personally acquainted with _____ of _____ testify to his moral character, his skill as a practical Druggist and Pharmacist, and his professional probity and good standing, and they recommend him for membership in the American Pharmaceutical Association.

NAME.

ADDRESS.

ROLL OF MEMBERS.

HONORARY MEMBERS.

Daniel B. Smith,	Philadelphia,	Pennsylvania,	1856
Thomas Farrington,	Boston,	Massachusetts,	1856
Montgomery J. Bailey, M.D.,	New York,	New York,	1856
George B. Wood, M.D.,	Philadelphia,	Pennsylvania,	1857
Elias Durand,	Philadelphia,	Pennsylvania,	1857

ACTIVE MEMBERS.

Henry T. Cummings, M.D.,	Portland,	Maine,	1853
Edmund Dana, Jr.,	Portland,	Maine,	1859
Walter F. Phillips,	Portland,	Maine,	1859
William Atwood,	Portland,	Maine,	1859
Sargent P. Coe,	Portland,	Maine,	1859
F. E. Covell,	Portland,	Maine,	1865
N. S. Harlow,	Bangor,	Maine,	1859
John G. Cook,	Lewistown,	Maine,	1859
William Baker,	Brunswick,	Maine,	1859
J. R. Carpenter,	Calais,	Maine,	1861
Charles A. Tufts,	Dover,	New Hampshire,	1856
O. Gilman Dort,	Keene,	New Hampshire,	1858
Charles A. Merrill,	Exeter,	New Hampshire,	1858
George S. Kendrick,	Lebanon,	New Hampshire,	1858
Joseph H. Thacher,	Portsmouth,	New Hampshire,	1859

John F. Rollins,	Concord,	New Hampshire,	1859
Julius Cone,	Concord,	New Hampshire,	1859
James Morgan,	Concord,	New Hampshire,	1859
George Moore,	Great Falls,	New Hampshire,	1859
Rufus W. Stevens,	Great Falls,	New Hampshire,	1859
George L. Dearborn,	New Market,	New Hampshire,	1853
Frank B. Clock,	Manchester,	New Hampshire,	1865
J. C. Bingham,	St. Johnsbury,	Vermont,	1853
Chauncy L. Case,	Brandon,	Vermont,	1859
L. L. Dutcher,	St. Albans,	Vermont,	1859
Frederick Dutcher,	St. Albans,	Vermont,	1859
Charles M. Duren,	St. Albans,	Vermont,	1865
Samuel M. Colcord,	Boston,	Massachusetts,	1852
Joseph Burnett,	Boston,	Massachusetts,	1852
Daniel Henchman,	Boston,	Massachusetts,	1853
Thomas Restieaux,	Boston,	Massachusetts,	1853
Emery Souther,	Boston,	Massachusetts,	1853
T. Larkin Turner,	Boston,	Massachusetts,	1853
Henry W. Lincoln,	Boston,	Massachusetts,	1853
William A. Brewer,	Boston,	Massachusetts,	1853
Thomas Hollis,	Boston,	Massachusetts,	1853
Ashel Boyden,	Boston,	Massachusetts,	1853
Henry D. Fowle,	Boston,	Massachusetts,	1853
James S. Melvin,	Boston,	Massachusetts,	1853
William W. Goodwin,	Boston,	Massachusetts,	1853
Robert R. Kent,	Boston,	Massachusetts,	1855
Alvah Littlefield,	Boston,	Massachusetts,	1856
Augustus P. Melzar,	Boston,	Massachusetts,	1856
Charles H. Atwood,	Boston,	Massachusetts,	1856
James Gordon,	Boston,	Massachusetts,	1857
Theodore Metcalf,	Boston,	Massachusetts,	1857
William Brown,	Boston,	Massachusetts,	1858
Oliver H. Webber,	Boston,	Massachusetts,	1858
George D. Towne,	Boston,	Massachusetts,	1858
J. B. Kidder,	Boston,	Massachusetts,	1858
George D. Ricker,	Boston,	Massachusetts,	1858
C. H. Lyon, Jr.,	Boston,	Massachusetts,	1858
I. Bartlett Patten,	Boston,	Massachusetts,	1858
Leopold Babo,	Boston,	Massachusetts,	1859
Levi G. Dodge,	Boston,	Massachusetts,	1859

E. Waldo Cutler,	Boston,	Massachusetts,	1859
Theodore S. Harris,	Boston,	Massachusetts,	1859
George H. Chapman,	Boston,	Massachusetts,	1859
Orlando Tompkins,	Boston,	Massachusetts,	1859
Isaac T. Campbell,	Boston,	Massachusetts,	1859
Thomas Doliber,	Boston,	Massachusetts,	1859
B. O. Wilson,	Boston,	Massachusetts,	1859
Michael H. Gleeson,	Boston,	Massachusetts,	1859
James A. Gleeson,	Boston,	Massachusetts,	1859
Joseph T. Brown,	Boston,	Massachusetts,	1859
Moses D. Colby,	Boston,	Massachusetts,	1859
George W. Woodbridge,	Boston,	Massachusetts,	1859
Samuel H. Woods,	Boston,	Massachusetts,	1859
Henry Warren,	Boston,	Massachusetts,	1859
John Butterworth,	Boston,	Massachusetts,	1860
Joshua G. Wilbur,	Boston,	Massachusetts,	1860
Elijah Smalley,	Boston,	Massachusetts,	1860
Levi Tower, Jr.,	Boston,	Massachusetts,	1860
Edward H. Fernald,	Boston,	Massachusetts,	1860
Charles F. Rogers,	Boston,	Massachusetts,	1860
Thomas S. Moffitt,	Boston,	Massachusetts,	1861
George F. H. Markoe,	Boston,	Massachusetts,	1863
Jos. L. Parker,	Boston,	Massachusetts,	1864
W. D. Atkinson, Jr.,	Boston,	Massachusetts,	1865
James F. Babcock,	Boston,	Massachusetts,	1865
Ch. F. Bartlett,	Boston,	Massachusetts,	1865
Wm. C. Brigham,	Boston,	Massachusetts,	1865
Henry Canning,	Boston,	Massachusetts,	1865
Solomon Carter,	Boston,	Massachusetts,	1865
John R. Colby,	Boston,	Massachusetts,	1865
J. B. Colton,	Boston,	Massachusetts,	1865
E. H. Doolittle,	Boston,	Massachusetts,	1865
Gust. D. Dows,	Boston,	Massachusetts,	1865
J. Howes Dyer,	Boston,	Massachusetts,	1865
John I. Fellows,	Boston,	Massachusetts,	1865
Geo. W. French,	Boston,	Massachusetts,	1865
Wm. E. Jenkins,	Boston,	Massachusetts,	1865
J. R. Nichols,	Boston,	Massachusetts,	1865
E. H. Perry,	Boston,	Massachusetts,	1865
W. Augustus Safford,	Boston,	Massachusetts,	1865
F. W. Simmons,	Boston,	Massachusetts,	1865

C. G. Underwood,	Boston,	Massachusetts,	1865
Eugene Whittemore,	Boston,	Massachusetts,	1865
D. G. Wilkins,	Boston,	Massachusetts,	1865
Abraham S. Wiley,	Cambridge,	Massachusetts,	1857
A. H. Ramsey,	Cambridge,	Massachusetts,	1859
Henry Thayer,	Cambridgeport,	Massachusetts,	1858
A. R. Bayley,	Cambridgeport,	Massachusetts,	1859
Joel S. Orne,	Cambridgeport,	Massachusetts,	1859
Francis D. Hardy, Jr.,	Cambridgeport,	Massachusetts,	1859
C. H. Lowe,	Cambridgeport,	Massachusetts,	1865
Benjamin F. Stacey,	Charlestown,	Massachusetts,	1860
John Buck,	Chelsea,	Massachusetts,	1855
John P. Lynam,	Chelsea,	Massachusetts,	1860
G. W. Churchill,	Chelsea,	Massachusetts,	1865
David Scott,	Worcester,	Massachusetts,	1855
Nelson R. Scott,	Worcester,	Massachusetts,	1859
M. S. McConville,	Worcester,	Massachusetts,	1859
Thomas A. McConville,	Worcester,	Massachusetts,	1864
George A. Kimball,	Haverhill,	Massachusetts,	1859
H. M. Whitney,	Lawrence,	Massachusetts,	1859
Edmund Bigelow,	Springfield,	Massachusetts,	1860
C. C. Bixby,	N. Bridgewater,	Massachusetts,	1859
Warren Tapley,	Lynn,	Massachusetts,	1859
Benjamin Proctor,	Lynn,	Massachusetts,	1859
David Howarth,	Andover,	Massachusetts,	1862
Thomas A. Sweetser,	South Danvers,	Massachusetts,	1859
James Emerton,	Salem,	Massachusetts,	1859
S. A. D. Sheppard,	Salem,	Massachusetts,	1865
James B. Lane,	Fitchburgh,	Massachusetts,	1853
Samuel Kidder, Jr.,	Lowell,	Massachusetts,	1859
David Coggin,	Lowell,	Massachusetts,	1864
Wm. H. French,	Lowell,	Massachusetts,	1865
T. Gibson Tweed,	Lowell,	Massachusetts,	1865
F. W. Hoyt,	Lowell,	Massachusetts,	1865
Charles E. Savell,	Roxbury,	Massachusetts,	1860
Francis Tinker,	Leominster,	Massachusetts,	1860
F. A. Weber,	Woonscket,	Massachusetts,	1860
William H. Ware,	Gloucester,	Massachusetts,	1859
Wm. L. Wetherell,	Gloucester,	Massachusetts,	1865
Eben Blatchford,	Rockport,	Massachusetts,	1857
Eben Blatchford, Jr.,	Rockport,	Massachusetts,	1865

George W. Berrian, Jr.,	North Andover,	Massachusetts,	1857
F. T. Whiting,	Great Barrington,	Massachusetts,	1863
Wm. D. Broomhead,	East Somerville,	Massachusetts,	1865
Geo. Marsh,	Dedham,	Massachusetts,	1865
Jeremiah Sanborn, Jr.,	Dorchester,	Massachusetts,	1865
E. R. Knights,	Melrose,	Massachusetts,	1865
Andrew Geyer,	Ipswich,	Massachusetts,	1865
James E. Blake,	New Bedford,	Massachusetts,	1865
James L. Hunt,	Hingham,	Massachusetts,	1865
Robert J. Taylor,	Newport,	Rhode Island,	1859
Wm. S. N. Allen,	Newport,	Rhode Island,	1865
Albert L. Calder,	Providence,	Rhode Island,	1859
Alfred C. Dana,	Providence,	Rhode Island,	1859
Albert J. Congdon,	East Greenwich,	Rhode Island,	1860
Henry F. Fish,	Waterbury,	Connecticut,	1852
Nathan Dikeman,	Waterbury,	Connecticut,	1859
Alfred Daggett, Jr.,	New Haven,	Connecticut,	1865
Nathan F. Peck,	Willimantic,	Connecticut,	1861
George D. Coggeshall,	New York City,	New York,	1852
Eugene Dupuy,	New York City,	New York,	1852
C. B. Guthrie,	New York City,	New York,	1852
Junius Gridley,	New York City,	New York,	1853
James S. Aspinwall,	New York City,	New York,	1855
John Canavan,	New York City,	New York,	1855
John Milhau,	New York City,	New York,	1855
Oliver Hull,	New York City,	New York,	1855
Isaac Coddington,	New York City,	New York,	1855
Frederick Hale,	New York City,	New York,	1855
H. T. Kiersted,	New York City,	New York,	1856
Henry Haviland,	New York City,	New York,	1857
George W. De la Vergne,	New York City,	New York,	1857
John Faber,	New York City,	New York,	1857
Wm. B. Little,	New York City,	New York,	1857
William J. Oliffe,	New York City,	New York,	1858
Thomas T. Green,	New York City,	New York,	1858
Ray B. Easterbrook,	New York City,	New York,	1858
Henry King,	New York City,	New York,	1858
Henry A. Cassebeer,	New York City,	New York,	1858
Edward L. Milhau,	New York City,	New York,	1858
Lewis T. Lazell,	New York City,	New York,	1858
Edward H. Marsh,	New York City,	New York,	1858

John H. Currie,	New York City,	New York,	1858
Andrew J. Parker,	New York City,	New York,	1858
Lucian F. Wheeler,	New York City,	New York,	1858
John C. Hart,	New York City,	New York,	1858
Robert A. Sands,	New York City,	New York,	1858
William Hegeman,	New York City,	New York,	1858
William A. Gellatly,	New York City,	New York,	1858
J. H. Westerfield,	New York City,	New York,	1858
Henry Kiersted,	New York City,	New York,	1858
Raymond Gravesend,	New York City,	New York,	1859
L. Leroy,	New York City,	New York,	1859
Henry Steele,	New York City,	New York,	1859
William Wright, Jr.,	New York City,	New York,	1859
James H. Anderson,	New York City,	New York,	1859
P. Wendover Bedford,	New York City,	New York,	1859
John W. Sheddon,	New York City,	New York,	1859
W. Neergaard,	New York City,	New York,	1859
F. F. Mayer,	New York City,	New York,	1859
Alexander V. Blake,	New York City,	New York,	1860
William J. Watson,	New York City,	New York,	1860
William M. Giles,	New York City,	New York,	1860
Paul Balluff,	New York City,	New York,	1860
John Carle, Jr.,	New York City,	New York,	1860
Jesse M. Sands,	New York City,	New York,	1860
Jabez H. Hazard,	New York City,	New York,	1860
James Weaver,	New York City,	New York,	1860
George W. Southwick,	New York City,	New York,	1860
E. L. Johnson,	New York City,	New York,	1860
William J. Darbey,	New York City,	New York,	1860
Theodore Schumann,	New York City,	New York,	1860
George G. Porter,	New York City,	New York,	1860
George E. Sheils,	New York City,	New York,	1860
Warren B. Gardiner,	New York City,	New York,	1860
Gustav Ramsperger,	New York City,	New York,	1860
George S. Peduzzi,	New York City,	New York,	1861
B. H. Reinold,	New York City,	New York,	1861
Adolph G. Dunn,	New York City,	New York,	1862
James S. Higgins,	New York City,	New York,	1862
Theobald Frohwein,	New York City,	New York,	1862
W. Fisher,	New York City,	New York,	1862

A. W. Gabaudan,	New York City,	New York,	1862
Daniel C. Robbins,	New York City,	New York,	1862
Alexander H. Everett,	New York City,	New York,	1863
Henry B. Morris,	New York City,	New York,	1864
F. W. Colby,	New York City,	New York,	1865
John Frey,	New York City,	New York,	1865
Max Frohwein,	New York City,	New York,	1865
Chas. F. L. Hohenthal,	New York City,	New York,	1865
C. W. Kitchen,	New York City,	New York,	1865
Gustavus Krehbiel,	New York City,	New York,	1865
Alfred Mason,	New York City,	New York,	1865
James F. Morgan,	New York City,	New York,	1865
Henry E. Webb,	New York City,	New York,	1865
Tristram W. Metcalf,	Brooklyn,	New York,	1857
Alexander Hudnot,	Brooklyn,	New York,	1857
Edward R. Squibb, M. D.,	Brooklyn,	New York,	1858
Robert J. Davies,	Brooklyn,	New York,	1858
George C. Close,	Brooklyn,	New York,	1858
J. Lindley Pyle,	Brooklyn,	New York,	1859
Cyrus Pyle,	Brooklyn,	New York,	1859
Thomas Kinghorne,	Brooklyn,	New York,	1860
Peter D. Leys,	Brooklyn,	New York,	1860
L. S. Hubbard,	Brooklyn,	New York,	1860
George C. Leys,	Brooklyn,	New York,	1860
W. E. P. Baylis,	Brooklyn,	New York,	1860
Richard J. Owens,	Brooklyn,	New York,	1860
Victor Heidenreich,	Brooklyn,	New York,	1860
Francois M. Bassett,	Brooklyn,	New York,	1861
John H. Niebrugge,	Brooklyn,	New York,	1861
J. F. Conway,	Brooklyn,	New York,	1862
Spencer O. Hatfield,	Brooklyn,	New York,	1864
Gilbert Long,	Brooklyn,	New York,	1864
Sylvester M. Earle,	Brooklyn,	New York,	1864
Edward H. Buehler,	Brooklyn,	New York,	1864
John T. Hanning,	Brooklyn,	New York,	1864
Robert R. Rhodes,	Brooklyn,	New York,	1865
George A. Newman,	Brooklyn,	New York,	1865
George J. McKay,	Mt. Vernon,	New York,	1864
R. S. McMurdy, M. D.,	Albany,	New York,	1861
William H. MacRae,	Factoryville,	New York,	1861
S. G. Welling,	New Rochelle,	New York,	1860

William E. Hagan,	Troy,	New York,	1860
William G. Stephens,	Yonkers,	New York,	1860
Robert J. Toplis,	Yonkers,	New York,	1863
Eugene Alex. Houston,	Yonkers,	New York,	1864
Aug. Theodore Moith,	Fishkill Landing,	New York,	1860
H. A. Tilden,	New Lebanon,	New York,	1858
A. I. Mathews,	Buffalo,	New York,	1855
William H. Peabody,	Buffalo,	New York,	1857
H. A. Blauw,	Rochester,	New York,	1856
Alfred S. Lane,	Rochester,	New York,	1857
James T. King,	Middletown,	New York,	1859
George B. Fish,	Saratoga Springs,	New York,	1860
Erastus N. Champlin,	Saratoga Springs,	New York,	1864
Hervey D. Thatcher,	Potsdam,	New York,	1865
James Stratton,	Bordentown,	New Jersey,	1859
Bunting Hankins,	Bordentown,	New Jersey,	1865
Alfred J. Shipley,	Jersey City,	New Jersey,	1859
James R. Mercier,	Jersey City,	New Jersey,	1865
J. M. Abernethy,	Jersey City,	New Jersey,	1865
Peter V. Coppuck,	Mount Holly,	New Jersey,	1857
A. S. White,	Mount Holly,	New Jersey,	1860
C. H. Dalrymple,	Morristown,	New Jersey,	1860
William Ball,	Elizabeth City,	New Jersey,	1860
Wm. J. Allison,	Burlington,	New Jersey,	1862
Charles Ellis,	Philadelphia,	Pennsylvania,	1852
William Procter, Jr.,	Philadelphia,	Pennsylvania,	1852
Alfred B. Taylor,	Philadelphia,	Pennsylvania,	1852
Edward Parrish,	Philadelphia,	Pennsylvania,	1852
Peter J. Hassard,	Philadelphia,	Pennsylvania,	1863
John H. Ecky,	Philadelphia,	Pennsylvania,	1856
John M. Maisch,	Philadelphia,	Pennsylvania,	1856
Dillwyn Parrish,	Philadelphia,	Pennsylvania,	1857
Samuel F. Troth,	Philadelphia,	Pennsylvania,	1857
Ambrose Smith,	Philadelphia,	Pennsylvania,	1857
Thomas P. James,	Philadelphia,	Pennsylvania,	1857
Charles Bullock,	Philadelphia,	Pennsylvania,	1857
Thomas S. Wiegand,	Philadelphia,	Pennsylvania,	1857
Samuel N. James,	Philadelphia,	Pennsylvania,	1857
Evan T. Ellis,	Philadelphia,	Pennsylvania,	1857
Louis M. Emanuel,	Philadelphia,	Pennsylvania,	1857
Wilson H. Pile, M. D.,	Philadelphia,	Pennsylvania,	1857

Samuel S. Bunting,	Philadelphia,	Pennsylvania,	1857
T. Morris Perot,	Philadelphia,	Pennsylvania,	1857
Asher S. Leidy,	Philadelphia,	Pennsylvania,	1857
Edward Donnelly, M. D.,	Philadelphia,	Pennsylvania,	1857
Hennell Stevens,	Philadelphia,	Pennsylvania,	1857
Samuel Chapman, M. D.,	Philadelphia,	Pennsylvania,	1857
Edward H. Hance,	Philadelphia,	Pennsylvania,	1857
Charles H. Eggert,	Philadelphia,	Pennsylvania,	1857
George M. Snowden,	Philadelphia,	Pennsylvania,	1857
William R. Warner,	Philadelphia,	Pennsylvania,	1857
O. S. Hubbell,	Philadelphia,	Pennsylvania,	1857
Henry N. Rittenhouse,	Philadelphia,	Pennsylvania,	1857
William J. Jenks,	Philadelphia,	Pennsylvania,	1858
E. Raphael Perot,	Philadelphia,	Pennsylvania,	1858
W. B. Thompson,	Philadelphia,	Pennsylvania,	1858
J. A. Heintzelman,	Philadelphia,	Pennsylvania,	1858
Adolphus F. Neynaber,	Philadelphia,	Pennsylvania,	1859
Adam H. Wilson,	Philadelphia,	Pennsylvania,	1859
Benjamin F. Johnson,	Philadelphia,	Pennsylvania,	1859
Thos. A. Lancaster,	Philadelphia,	Pennsylvania,	1859
Daniel S. Jones,	Philadelphia,	Pennsylvania,	1859
James T. Shinn,	Philadelphia,	Pennsylvania,	1860
George J. Scattergood,	Philadelphia,	Pennsylvania,	1860
Charles Shivers,	Philadelphia,	Pennsylvania,	1860
William Evans, Jr.,	Philadelphia,	Pennsylvania,	1860
Benjamin J. Crew,	Philadelphia,	Pennsylvania,	1860
J. Lewis Crew,	Philadelphia,	Pennsylvania,	1860
Henry Bower,	Philadelphia,	Pennsylvania,	1860
Thomas R. Coombe,	Philadelphia,	Pennsylvania,	1860
Abram Alburger, Jr.,	Philadelphia,	Pennsylvania,	1860
J. B. Moore,	Philadelphia,	Pennsylvania,	1860
Frederick A. Keffer,	Philadelphia,	Pennsylvania,	1862
George Y. Shoemaker,	Philadelphia,	Pennsylvania,	1862
John C. Savery,	Philadelphia,	Pennsylvania,	1862
John C. Everson,	Philadelphia,	Pennsylvania,	1863
Henry J. Weber,	Philadelphia,	Pennsylvania,	1863
Clayton N. Wills,	Philadelphia,	Pennsylvania,	1864
Charles F. Gristock,	Philadelphia,	Pennsylvania,	1864
Edward C. Jones,	Philadelphia,	Pennsylvania,	1864
William C. Bakes,	Philadelphia,	Pennsylvania,	1864
Samuel Campbell,	Philadelphia,	Pennsylvania,	1864

S. Mason McCollin,	Philadelphia,	Pennsylvania,	1864
William Ellis,	Philadelphia,	Pennsylvania,	1864
Alfred Mellor,	Philadelphia,	Pennsylvania,	1864
George H. Ashton,	Philadelphia,	Pennsylvania,	1864
Theodore St. Clair,	Philadelphia,	Pennsylvania,	1864
James L. Bispham,	Philadelphia,	Pennsylvania,	1865
Andrew Blair,	Philadelphia,	Pennsylvania,	1865
Geo. W. Eldridge,	Philadelphia,	Pennsylvania,	1865
Oh. Eug. Ha nchen,	Philadelphia,	Pennsylvania,	1865
Robert B. Parkinson,	Philadelphia,	Pennsylvania,	1865
Robert Platzer,	Philadelphia,	Pennsylvania,	1865
Alonzo Robbins,	Philadelphia,	Pennsylvania,	1865
R. M. Sh. emaker, Jr.,	Philadelphia,	Pennsylvania,	1865
J. Henry C. Simes,	Philadelphia,	Pennsylvania,	1865
Charles L. Eberle,	Germantown,	Pennsylvania,	1865
Georgé W. Mowbray,	Titusville,	Pennsylvania,	1860
Charles A. Bannvart,	Harrisburg,	Pennsylvania,	1856
William Heyser, Jr.,	Chambersburg,	Pennsylvania,	1856
William Loeffler,	Chambersburg,	Pennsylvania,	1857
Charles A. Heinitch,	Lancaster,	Pennsylvania,	1857
Leander Neal	Lancaster,	Pennsylvania,	1858
John C. Long,	Lancaster,	Pennsylvania,	1868
M. M. Selfridge,	Bethlehem,	Pennsylvania,	1858
Joseph L. Lemberger,	Lebanon,	Pennsylvania,	1858
E. T. Miller,	York,	Pennsylvania,	1859
Washington Laycock,	Danville,	Pennsylvania,	1857
J. A. Wolf,	Wrightsville,	Pennsylvania,	1860
Geo. A. Kelley,	Alleghany,	Pennsylvania,	1864
Samuel K. Norgrove,	Pittsburg,	Pennsylvania,	1857
Charles H. Super,	Pittsburg,	Pennsylvania,	1858
Harmar D. Scully,	Pittsburg,	Pennsylvania,	1858
Jon. C. Mattern,	Pittsburg,	Pennsylvania,	1860
Jacob T. Haehalen, Jr.,	Pittsburg,	Pennsylvania,	1860
Richard Tener, Jr.,	Pittsburg,	Pennsylvania,	1863
Alfred J. Rankin,	Pittsburg,	Pennsylvania,	1864
Joseph Abel,	Pittsburg,	Pennsylvania,	1864
J. C. Hughes,	Pottsville,	Pennsylvania,	1862
A. W. Newton,	Bristol,	Pennsylvania,	1862
Henry W. Lesley,	Bristol,	Pennsylvania,	1862
Francis P. Green,	Bellefonte,	Pennsylvania,	1864
W. H. Pratt,	Wilmington,	Delaware,	1857

A. H. Grimshaw,	Wilmington,	Delaware,	1858
John P. Toner,	Wilmington,	Delaware,	1859
Ferris Bringham,	Wilmington,	Delaware,	1862
A. P. Sharp,	Baltimore,	Maryland,	1855
George W. Andrews,	Baltimore,	Maryland,	1856
J. Jacob Smith,	Baltimore,	Maryland,	1856
Charles Caspari,	Baltimore,	Maryland,	1856
William Reed,	Baltimore,	Maryland,	1856
J. H. Lemmon,	Baltimore,	Maryland,	1856
Joseph Roberts,	Baltimore,	Maryland,	1856
E. J. Russell,	Baltimore,	Maryland,	1856
J. Faris Moore,	Baltimore,	Maryland,	1856
Oscar Monsarrat,	Baltimore,	Maryland,	1856
J. B. Baxley,	Baltimore,	Maryland,	1856
Samuel McPherson,	Baltimore,	Maryland,	1856
James Balmer,	Baltimore,	Maryland,	1856
William S. Thompson,	Baltimore,	Maryland,	1856
William Caspari,	Baltimore,	Maryland,	1856
J. J. Thomsen,	Baltimore,	Maryland,	1856
N. H. Jennings,	Baltimore,	Maryland,	1857
Elisha H. Perkins,	Baltimore,	Maryland,	1857
A. Vogeler,	Baltimore,	Maryland,	1858
Lewis Dohme,	Baltimore,	Maryland,	1859
H. A. Elliott,	Baltimore,	Maryland,	1859
John Block,	Baltimore,	Maryland,	1860
John S. Benzinger,	Baltimore,	Maryland,	1860
James E. McDaniel,	Baltimore,	Maryland,	1860
William H. Brown,	Baltimore,	Maryland,	1863
Alexander E. Brown,	Baltimore,	Maryland,	1863
Charles E. Dohme,	Baltimore,	Maryland,	1863
Gustavus Dohme,	Baltimore,	Maryland,	1863
S. Ellwood Morrison,	Baltimore,	Maryland,	1863
Joseph C. O'Brien,	Baltimore,	Maryland,	1863
John G. Nagle,	Baltimore,	Maryland,	1863
Thos. E. Kirby,	Baltimore,	Maryland,	1863
Alonso Lilly, Jr.,	Baltimore,	Maryland,	1863
William W. Cunningham,	Baltimore,	Maryland,	1863
E. Walton Russell,	Baltimore,	Maryland,	1863
Columbus V. Emich,	Baltimore,	Maryland,	1863
John F. Hancock,	Baltimore,	Maryland,	1863
John P. Muth,	Baltimore,	Maryland,	1863

John H. Winkleman,	Baltimore,	Maryland,	1864
Michael J. Lauer,	Baltimore,	Maryland,	1866
Jonas Winter,	Hagerstown,	Maryland,	1863
Joseph G. Skinner,	Salisbury,	Maryland,	1864
John L. Kidwell,	Georgetown,	Dist. Columbia,	1856
Valentine Harbaugh,	Washington,	Dist. Columbia,	1856
F. S. Walsh,	Washington,	Dist. Columbia,	1856
John W. Nairn,	Washington,	Dist. Columbia,	1856
Samuel F. Tyson,	Washington,	Dist. Columbia,	1857
James N. Callan,	Washington,	Dist. Columbia,	1857
S. R. Sylvester,	Washington,	Dist. Columbia,	1858
Francis L. Gaither,	Washington,	Dist. Columbia,	1860
Giles G. C. Simms,	Washington,	Dist. Columbia,	1860
Francis X. Dooley,	Washington,	Dist. Columbia,	1863
Talbot C. Murray,	Washington,	Dist. Columbia,	1863
R. C. Lineaweaver,	Washington,	Dist. Columbia,	1864
B. H. Stabler, M. D.,	Alexandria,	Virginia,	1856
John A. Milburn,	Alexandria,	Virginia,	1858
Alexander Duval,	Richmond,	Virginia,	1852
S. M. Zachrisson,	Richmond,	Virginia,	1853
T. Roberts Baker,	Richmond,	Virginia,	1856
James Cooke,	Fredericksburg,	Virginia,	1856
Fayette W. Johnson,	Fredericksburg,	Virginia,	1858
J. Hartley Bunn,	Lynchburg,	Virginia,	1859
F. M. Wells,	Charlotte,	Virginia,	1856
Charles K. Gallagher,	Washington,	North Carolina,	1857
Richard B. Saunders,	Chapel Hill,	North Carolina,	1858
John Thomson,	Sumter,	South Carolina,	1856
H. J. Macdonald,	Barnwell C. H.	South Carolina,	1856
R. H. Land,	Newberry C. H.	South Carolina,	1859
Lewis T. Sillyman,	Columbia,	South Carolina,	1859
A. A. Solomons,	Savannah,	Georgia,	1858
W. W. Solomons,	Savannah,	Georgia,	1858
Robert Battey,	Rome,	Georgia,	1856
W. H. Warner,	Rome,	Georgia,	1859
J. B. W. Nowlin,	Rome,	Georgia,	1859
John M. Clark,	Milledgeville,	Georgia,	1857
Fleming G. Grieve,	Milledgeville,	Georgia,	1859
John S. Pemberton,	Columbus,	Georgia,	1857
J. A. Taylor,	Atlanta,	Georgia,	1859
W. A. Lansdell,	Atlanta,	Georgia,	1859

Robert J. Massey,	Atlanta,	Georgia,	1859
B. M. Smith,	Atlanta,	Georgia,	1859
J. Henry Zeilin,	Macon,	Georgia,	1859
O. F. Cawthon,	Mobile,	Alabama,	1860
Fairman S. Taber,	Huntsville,	Alabama,	1861
F. Glackmeyer,	Montgomery,	Alabama,	1856
P. C. Candidus,	Aberdeen,	Mississippi,	1857
Crawford Blackwood,	Columbus,	Mississippi,	1857
Matthew F. Ash,	Jackson,	Mississippi,	1856
William Pryor Creecy,	Vicksburg,	Mississippi,	1860
Charles C. Thornton, M. D.,	Sharon,	Mississippi,	1861
A. E. Richards,	Plaquemine,	Louisiana,	1856
James A. Lee,	New Iberia,	Louisiana,	1856
John Beynon,	Shreveport,	Louisiana,	1858
John H. Pope,	New Orleans,	Louisiana,	1860
William B. Chapman,	Cincinnati,	Ohio,	1852
W. J. M. Gordon,	Cincinnati,	Ohio,	1854
Wm. S. Merrell,	Cincinnati,	Ohio,	1854
J. V. Whetstone,	Cincinnati,	Ohio,	1854
J. W. Hannaford,	Cincinnati,	Ohio,	1854
William H. Adderly,	Cincinnati,	Ohio,	1854
W. H. Coolidge,	Cincinnati,	Ohio,	1854
Theodore Marsh,	Cincinnati,	Ohio,	1854
William R. Smith,	Cincinnati,	Ohio,	1854
John Scott,	Cincinnati,	Ohio,	1854
William C. Arons,	Cincinnati,	Ohio,	1854
E. S. Wayne,	Cincinnati,	Ohio,	1854
Paul Reinlein,	Cincinnati,	Ohio,	1856
Oliver F. Gordon,	Cincinnati,	Ohio,	1857
George A. Shuesler,	Cincinnati,	Ohio,	1858
John C. Gerhard,	Cincinnati,	Ohio,	1862
L. Groneweg,	Cincinnati,	Ohio,	1864
A. W. Foertmyer,	Cincinnati,	Ohio,	1864
John Keeshan,	Cincinnati,	Ohio,	1864
F. A. Crowther,	Cincinnati,	Ohio,	1864
Alfred C. Hill,	Cincinnati,	Ohio,	1864
I. L. A. Greve,	Cincinnati,	Ohio,	1864
Samuel B. Allen,	Cincinnati,	Ohio,	1864
A. Wagner,	Cincinnati,	Ohio,	1864
H. F. Reum,	Cincinnati,	Ohio,	1864
E. Berghausen,	Cincinnati,	Ohio,	1864

A. Fennel,	Cincinnati,	Ohio,	1864
Ernst KampfmueUer,	Cincinnati,	Ohio,	1864
James W. Nadand,	Cincinnati,	Ohio,	1864
E. Kunkel,	Cincinnati,	Ohio,	1864
Henry Gers,	Cincinnati,	Ohio,	1864
C. H. Bode,	Cincinnati,	Ohio,	1864
O. Heineman,	Cincinnati,	Ohio,	1864
Wm. Karrmann,	Cincinnati,	Ohio,	1864
E. W. Crowther,	Cincinnati,	Ohio,	1864
T. D. Wells.	Cincinnati,	Ohio,	1864
H. H. Hill,	Cincinnati,	Ohio,	1864
A. M. Johnston,	Cincinnati,	Ohio,	1864
James Markward,	Cincinnati,	Ohio,	1864
Wm. Tilley,	Cincinnati,	Ohio,	1864
A. Salpins,	Cincinnati,	Ohio,	1864
L. Witzell,	Cincinnati,	Ohio,	1864
Henry Fritsch,	Cincinnati,	Ohio,	1864
W. E. Reifsnider,	Cincinnati,	Ohio,	1864
John McK. Walker,	Cincinnati,	Ohio,	1864
Hiram Maguire,	Cincinnati,	Ohio,	1864
W. H. Durkee,	Cincinnati,	Ohio,	1864
B. F. Oxley,	Cincinnati,	Ohio,	1864
Matthew M. Yorston,	Cincinnati,	Ohio,	1864
Michael Parr,	Cincinnati,	Ohio,	1864
S. L. Hayden,	Cincinnati,	Ohio,	1864
J. G. Fratz,	Cincinnati,	Ohio,	1864
A. Hottendorf,	Cincinnati,	Ohio,	1864
George Eger,	Cincinnati,	Ohio,	1864
Jos. H. Debolt,	Cincinnati,	Ohio,	1864
Griffith Rees,	Cincinnati,	Ohio,	1864
C. M. Helman,	Cincinnati,	Ohio,	1864
Otto Lippert,	Cincinnati,	Ohio,	1864
H. M. Merrill,	Cincinnati,	Ohio,	1864
Charles Foertmyer,	Cincinnati,	Ohio,	1864
Wm. Snyder,	Cincinnati,	Ohio,	1864
Bruce M. Brake,	Cincinnati,	Ohio,	1865
Augustus Henkel,	Cincinnati,	Ohio,	1865
Daniel Roemer,	Cincinnati,	Ohio,	1865
Alfred V. Forgey,	Cincinnati,	Ohio,	1865
George W. Wilcox,	Columbia,	Ohio,	1864
George H. Fickhardt,	Circlevilla,	Ohio,	1864

Wm. H. Shuey,	Springfield,	Ohio,	1864
J. W. Dietrich,	Dayton,	Ohio,	1856
William Fiske,	Cleveland,	Ohio,	1857
E. W. Sackrider,	Cleveland,	Ohio,	1859
Robt. C. Kennedy,	Cleveland,	Ohio,	1865
J. F. Groseklaus,	Navarre,	Ohio,	1859
Hamilton Creighton,	Xenia,	Ohio,	1854
John Jackson,	Knoxville,	Tennessee,	1857
J. H. Larwill, Jr.,	Columbia,	Tennessee,	1858
Edwin Scott,	Chattanooga,	Tennessee,	1865
Henry C. Steever,	Memphis,	Tennessee,	1865
Leonce Cherot,	Memphis,	Tennessee,	1865
Frederick Stearns,	Detroit,	Michigan,	1855
T. B. Spence,	Detroit,	Michigan,	1857
Samuel P. Duffield,	Detroit,	Michigan,	1859
George M. Wheeler,	Detroit,	Michigan,	1860
William Johnston,	Detroit,	Michigan,	1860
Saml. S. Garrigues, Ph. D.,	East Saginaw,	Michigan,	1855
Robert F. Lattimer,	Jackson,	Michigan,	1857
L. R. Blackman,	Jackson,	Michigan,	1865
John T. Fuller,	Ann Arbor,	Michigan,	1857
Robert C. Wardell,	Battle Creek,	Michigan,	1860
George P. Glazier,	Parma,	Michigan,	1863
Thomas H. Barr,	Terre Haute,	Indiana,	1853
James Gallagher,	Terre Haute,	Indiana,	1865
Geo. W. Austin,	Terre Haute,	Indiana,	1865
B. F. Scribner,	New Albany,	Indiana,	1859
George W. Sloan,	Indianapolis,	Indiana,	1857
Charles Pefferman,	Peru,	Indiana,	1859
W. J. Luck,	Vincennes,	Indiana,	1859
A. Samson,	Richmond,	Indiana,	1864
Uriah F. Shalter,	Lafayette,	Indiana,	1864
C. F. G. Meyer,	Fort Wayne,	Indiana,	1860
Andrew J. Tully,	Fort Wayne,	Indiana,	1862
Edwin Tomlinson,	Fort Wayne,	Indiana,	1865
H. Van Sweringen,	Fort Wayne,	Indiana,	1865
Jerome B. Jardella,	Madison,	Indiana,	1865
G. W. Brown,	Logansport,	Indiana,	1865
Edwin O. Gale,	Chicago,	Illinois,	1857
William H. Gale,	Chicago,	Illinois,	1857
James D. Paine,	Chicago,	Illinois,	1857

George Buck,	Chicago,	Illinois,	1860
Wm. F. Blocki,	Chicago,	Illinois,	1863
F. Mahla, Ph. D.,	Chicago,	Illino's,	1864
Alb. E. Ebert,	Chicago,	Illinois,	1864
James M. Mill,	Chicago,	Illinois,	1864
E. H. Sargent,	Chicago,	Illinois,	1864
N. Gray Bartlett,	Chicago,	Illinois,	1864
Henry Biroth,	Chicago,	Illinois,	1865
James V. Z. Blaney, M. D.,	Chicago,	Illinois,	1865
S. S. Bliss,	Chicago,	Illinois,	1865
James Boland,	Chicago,	Illinois,	1865
Thos. Brown,	Chicago,	Illinois,	1865
A. B. Bryan,	Chicago,	Illinois,	1865
F. A. Bryan,	Chicago,	Illinois,	1865
N. T. Curth,	Chicago,	Illinois,	1865
Emil Dietzsch,	Chicago,	Illinois,	1865
Emil Dreier,	Chicago,	Illinois,	1865
Henry G. d'Evers,	Chicago,	Illinois,	1865
Henry W. Fuller,	Chicago,	Illinois,	1865
G. M. Hambright,	Chicago,	Illinois,	1865
Charles Heylman,	Chicago,	Illinois,	1865
J. H. Hooper,	Chicago,	Illinois,	1865
George McPherson,	Chicago,	Illinois,	1865
N. Mead,	Chicago,	Illinois,	1865
W. H. Muller,	Chicago,	Illinois,	1865
John Parsons,	Chicago,	Illinois,	1865
J. P. Sharp,	Chicago,	Illinois,	1865
Henry Sweet,	Chicago,	Illinois,	1865
M. P. White,	Chicago,	Illinois,	1865
Thos. Whitfield,	Chicago,	Illinois,	1865
Joseph Willard,	Chicago,	Illinois,	1865
Louis Woltersdorf,	Chicago,	Illinois,	1865
Thos. J. Covell,	Springfield,	Illinois,	1864
E. H. Price, M. D.,	Tamaroa,	Illinois,	1863
D. S. Dyson,	Bloomington,	Illinois,	1856
Robert Thompson,	Bloomington,	Illinois,	1860
George Blinkhorn,	Rock Island,	Illinois,	1860
Edwin R. Smith,	Monmouth,	Illinois,	1862
John Burrell,	Freeport,	Illinois,	1865
G. T. Chamberlain,	St. Louis,	Missouri,	1853
Eugene L. Massot,	St. Louis,	Missouri,	1857
James O'Gallagher,	St. Louis,	Missouri,	1858

Alexander Leitch,	St. Louis,	Missouri,	1858
Enno Sander,	St. Louis,	Missouri,	1858
W. H. Dornin,	St. Louis,	Missouri,	1858
Isaac E. Jones,	St. Louis,	Missouri,	1858
Samuel D. Hendel,	St. Louis,	Missouri,	1858
Arthur Leitch,	St. Louis,	Missouri,	1860
H. W. Scheffer,	St. Louis,	Missouri,	1868
W. H. Crawford,	St. Louis,	Missouri,	1864
Theodore Kalb,	St. Louis,	Missouri,	1864
James McBride,	St. Louis,	Missouri,	1864
Thos. Tanton,	St. Louis,	Missouri,	1865
Evermont Randals,	St. Louis,	Missouri,	1865
Ferd. W. Sennewald,	St. Louis,	Missouri,	1865
Hubert Primm,	Carondelet,	Missouri,	1855
John C. Parr,	Covington,	Kentucky,	1856
D. B. Miller,	Covington,	Kentucky,	1864
H. R. Miller,	Covington,	Kentucky,	1864
H. A. Hughes,	Louisville,	Kentucky,	1857
C. Lewis Diehl,	Louisville,	Kentucky,	1863
Wm. Kent,	Fort Dodge,	Iowa,	1864
O. F. G. Collins,	Beloit,	Wisconsin,	1859
John R. Drake,	Milwaukee,	Wisconsin,	1860
A. Palmer,	Janesville,	Wisconsin,	1865
W. Sherman Potts,	St. Paul,	Minnesota,	1859
Louis D. Lanzwiert,	San Francisco,	California,	1859
Charles Hodge,	San Francisco,	California,	1859
George S. Dickey,	San Francisco,	California,	1859
George E. Hinckly,	San Francisco,	California,	1859
Charles E. Hinckly,	San Francisco,	California,	1859
William H. Keith,	San Francisco,	California,	1859
James G. Steele,	San Francisco,	California,	1859
Robert Hall,	San Francisco,	California,	1859
James H. Widdber,	San Francisco,	California,	1859
William H. Brigham,	San Francisco,	California,	1859
Henry Steele,	San Francisco,	California,	1859
Charles P. Pollard,	Marysville,	California,	1859
F. T. Maynard,	Petaluma,	California,	1864
Robert J. Brown,	Leavenworth,	Kansas,	1862
Fred. Colman,	Walla Walla,	Washington Ter.,	1865
William Saunders,	London,	Canada West,	1860
George J. Waugh,	Stratford,	Canada West,	1862
James B. Heyl,	Hamilton,	Bermuda,	1863

LIST OF DECEASED MEMBERS.

HONORARY MEMBERS.

		Elected	Died,
Franklin Bache, M. D.,	Philadelphia, Pa.,	1857,	1864

ACTIVE MEMBERS.

		Elected,	Died,
Charles L. Bache,	San Francisco, Cal.,	1852.	1854
John W. Barry,	Baltimore, Md.,	1856,	1861
Francis O. Bigelow,	Medford, Mass.,	1859,	1863
Samuel J. Billings,	New York, N. Y.,	1860,	1865
Henry C. Blair,	Philadelphia, Pa.,	1855,	1862
John T. Brown,	Boston, Mass.,	1859,	1860
Benjamin Canavan,	New York, N. Y.,	1855,	1857
Charles T. Carney,	Boston, Mass.,	1853,	1862
W. F. Clency,	Cincinnati, O.,	1859,	1865
Walter S. Coon,	New York, N. Y.,	1858,	1861
N. Cressman,	Waterloo, Canada West,	1863,	1864
James E. Cunningham,	Pittsburg, Pa.,	1860,	1863
Alexander Cushman,	New York, N. Y.,	1858,	1861
John P. Dodge,	New York, N. Y.,	1855,	1863
Richard Forester,	Brooklyn, New York,	1860,	1862
William Gay,	Cambridgeport, Mass.,	1858,	1862
Andrew Geyer,	Boston, Mass.,	1853,	1855
J. A. Hegeman,	New York, N. Y.,	1855,	1860
F. L. John,	Philadelphia, Pa.,	1856,	1864
Charles A. Junghanns,	Cincinnati, O.,	1858,	1862
Asbury Kent,	Cincinnati, O.,	1854,	1860
E. E. Knapp,	Norwalk, Conn.,	1860,	1862
Joseph Laidley,	Richmond, Va.,	1852,	1861
Wm. Longshaw, Jr., M.D.,	Bayou Sara, La.,	1858,	1864
John McDonald,	Brooklyn, N. Y.,	1860,	1861
T. C. McIntyre, M. D.,	Washington, D. C.,	1858,	1862
James T. Maxwell,	New York, N. Y.,	1855,	1860
John Meakim, (Pres. 1855-56),	New York, N. Y.,	1852,	1863
Samuel W. Osgood,	Davenport, Iowa,	1858,	1860
Albert G. Palmer,	Washington, D. C.,	1858,	1860
S. P. Peck,	Bennington, Vt.,	1853,	1859
Samuel R. Philbrick,	Boston, Mass.,	1852,	1859
L. Phillips,	Baltimore, Md.,	1856,	1865
Lewis Rehfuess,	Cincinnati, O.,	1854,	1856
David Roberts,	Boston, Mass.,	1858,	1863
Fred. Rollmann,	Philadelphia, Pa.,	1862,	1864

C. Augustus Smith,	Cincinnati, O.,	1852,	1860
Wm. H. Squire,	Germantown, Pa.,	1862,	1868
Henry Steiner,	Philadelphia, Pa.,	1857,	1858
A. M. Stevens,	Cincinnati, O.,	1854,	1860
Wm. Thomas,	Jersey City, N. J.,	1855,	1856
S. B. Waite,	Washington, D. C.,	1858,	1862
G. W. Weyman, Ph. D.,	Pittsburg, Pa.,	1858,	1864
Daniel F. White,	Charlestown, Mass.,	1859,	1864
Silas Whitehead,	Lynchburg, Va.,	1858,	1858
G. C. Wilson,	Boston, Mass.,	1859,	1861
O. Wiseman,	Baltimore, Md.,	1856,	1862
G. Davidge Wood,	Baltimore, Md.,	1856,	1863

MEMBERS STRICKEN FROM THE ROLL.

List of Members who have resigned, or refused, or failed to pay their annual dues for over three years, and still hold a certificate of membership. Their names are ordered to be stricken from the roll, in accordance with the report and resolution published on page 81.

	Formerly of	Now of	Electd.
Laban Beal,	Boston, Mass.,	Charlestown, Mass.,	1861
B. K. Bliss,*	Springfield, Mass.,	Springfield, Mass.,	1859
Daniel B. Clarke,	Washington, D. C.,	Washington, D. C.,	1857
Granville M. Clark,*	Boston, Mass.,	Boston, Mass.,	1858
George Cooke,	Philadelphia, Pa.,	Unknown,	1857
R. H. Dryden,	Baltimore, Md.,	Unknown,	1856
Geo. J. Fetter,	Baltimore, Md.,	Unknown,	1856
Andrew R. Cox,	Boston, Mass.,	Unknown,	1858
Wm. H. Gilman,	Washington, D. C.,	Columbia, Mo.,	1856
Wm. F. Henry,	New York, N. Y.,	Unknown,	1856
Hervey Herrman,	Washington, D. C.,	Unknown,	1858
L. E. Higby,*	Detroit, Mich.,	New York, N. Y.,	1858
Geo. O. Hunt, Jr.,*	Frederickton, N. B.,	Frederickton, N. B.,	1859
Edward Kloman,	Baltimore, Md.,	Unknown,	1858
Otto Laist,*	New York, N. Y.,	Cincinnati, O.,	1860
Otto Leuschner,	Detroit, Mich.,	Detroit, Mich.,	1857
John L. Love,	Washington, D. C.,	Washington, D. C.,	1858
H. H. McPherson,	Washington, D. C.,	Washington, D. C.,	1856
Aug. Pressinger,	New York, N. Y.,	South Amer., unknown,	1860
J. C. Moody,	St. Louis, Mo.,	California, unknown,	1858
Jos. B. Moore,	Washington, D. C.,	Washington, D. C.,	1858
E. A. Morse,	Rutland, Vt.,	New Orleans, La.,	1859
Wm. H. Page,	Brooklyn, N. Y.,	Brooklyn, N. Y.,	1860

* Resigned.

H. M. Pettit,	Pittsburg, Pa.,	Unknown,	1860
Edward Shoemaker,	Washington, D. C.,	Unknown,	1863
George Syme,	New York, N. Y.,	New York, N. Y.	1857
Fred. Thompson,	New York, N. Y.,	California, unknown,	1856
T. W. Tomlinson,	Baltimore, Md.,	Unknown,	1856
Thomas Whitehorne,	Brooklyn, N. Y.,	England, unknown,	1857

All the above members, whose residence was known, have been notified in accordance with Section 6, Article III. of the Constitution, to return their Certificates of Membership, agreeable to Section 4 of Art. II. No answer has been received from any of them. J. M. MAISCH, Secretary.

List of Members whose names have been directed to be stricken from the Roll for non-payment of dues for over three years, in accordance with the report and resolution on page 81.

			Elected
Geo. F. Ayling,	Brooklyn, N. Y.,		1853
James M. Bowers,	Baltimore, Md.,	Now unknown,	1856
Cornelius Boyle,	Washington, D. C.,	Now unknown,	1853
Wm. Egerton,	New York, N. Y.,		1853
Edw. C. Gilpin,	Baltimore, Md.,	Now unknown,	1856
Wm. M. Guilford, M. D.,	Lebanon, Pa.,		1857
Thos. K. Hilsby,	Baltimore, Md.,		1856
Joseph L. Moffatt,	Roxbury, Mass.,		1860
Fred. V. Rushton,	New York, N. Y.,		1853
L. M. Smith,	Washington, D. C.,		1853
Wm. M. Somerville,	New York, N. Y.,		1853
Saml. N. Stebbins,	New York, N. Y.,		1853
David Stewart, M. D.,	Baltimore, Md.,	Now unknown,	1852
Jos. B. Walsh,	Washington, D. C.,	Now unknown,	1856

LIST OF RESIGNATIONS.

J. W. Bowling,	Alexandria,	Virginia,	1857
H. H. Burrington,	Providence,	Rhode Island,	1859
Geo. O. Bridges,	New York,	New York,	1853
John D. Dix,	New York,	New York,	1853
Aug. C. Evans,	New York,	New York,	1853
Edw. R. Fell,	Philadelphia,	Pennsylvania,	1852
John French,	Boston,	Massachusetts,	1859
L. S. Haskell,	New York,	New York,	1852
Henry R. Haydock,	New York,	New York,	1853
John P. Howe,	Boston,	Massachusetts,	1859
Anthony S. Jones,	Newburyport,	Massachusetts,	1859
T. B. Merrick,	New York,	New York,	1853
F. K. Phillips,	Boston,	Massachusetts,	1859
Bradford Ritter,	Philadelphia,	Pennsylvania,	1857
J. O. Rogers,	Baltimore,	Maryland,	1856
A. J. Weeks,	Boston,	Massachusetts,	1859

The following gentlemen have either refused or neglected to sign the Constitution. Their names are stricken from the Roll in accordance with Section 3d of Article II.

			Elected.
John B. Arnold,	Fitchburg,	Massachusetts,	1859
Luther Atwood,	Brooklyn,	New York,	1859
J. T. Barnett,	Danville,	Kentucky,	1859
J. W. Bowers,	New York,	New York,	1858
B. F. Brown,	Boston,	Massachusetts,	1859
Jas. L. Burbank,	Worcester,	Massachusetts,	1859
Wm. T. S. Cardy,	Chelsea,	Massachusetts,	1859
John A. Child,	Madison,	Indiana,	1856
Chas. Clarke,	Lawrence,	Massachusetts,	1859
S. Robinson Coale,	Baltimore,	Maryland,	1863
B. W. Conant,	Woburn,	Massachusetts,	1858
William J. Cutler,	Boston,	Massachusetts,	1829
Chas. E. Field,	Chelsea,	Massachusetts,	1859
Edw. G. Frothingham,	Haverhill,	Massachusetts,	1859
Dexter D. Geyer,	Franklin,	New Hampshire,	1857
Benj Gilpatrick, Jr.,	Boston,	Massachusetts,	1862
Charles Heckman,	Chicago,	Illinois,	1857
Geo. E. Jeannot,	Philadelphia,	Pennsylvania,	1864
Simon Johnston,	Pittsburg,	Pennsylvania,	1864
M. Henry Kollock,	Philadelphia,	Pennsylvania,	1856
Thomas Lancaster,	Philadelphia,	Pennsylvania,	1857
A. Langenbeck,	Cincinnati,	Ohio,	1864
W. L. McCorkle,	Columbia,	Pennsylvania,	1857
Jas. M. B. McNary,	Hartford,	Connecticut,	1859
Wm. D. Miller,	Boston,	Massachusetts,	1859
Harry C. Morris,	St. Paul,	Minnesota,	1859
Samuel E. Noyes,	New Haven,	Connecticut,	1859
Charles A. Nolcini,	Newburyport,	Massachusetts,	1858
J. Lindsey O'Neal,	Philadelphia,	Pennsylvania,	1858
R. A. Payne,	Washington,	District of Columbia,	1858
E. A. Pond,	Rutland,	Vermont,	1859
E. H. Rollins,	Concord,	New Hampshire,	1859
A. Rutenick,	Cincinnati,	Ohio,	1864
Thos. Sisson,	Hartford,	Connecticut,	1860
Saml. A. Smith,	Newburyport,	Massachusetts,	1859
Geo. M. Smyser,	Philadelphia,	Pennsylvania,	1863
L. P. Stone,	Newport,	Kentucky,	1864
S. B. Tomlinson,	Cincinnati,	Ohio,	1864
Geo. M. Washburn,	Chicago,	Illinois,	1859
Thos. Weaver,	Philadelphia,	Pennsylvania,	1858
Theodore Wheeler,	Boston,	Massachusetts,	1859
O. M. Whildon,	Pittsfield,	Massachusetts,	1860
Uriah B. Wilson,	Ann Arbor,	Michigan,	1859

The following gentlemen became members without their knowledge or consent, and do not desire to continue their membership. Their names are accordingly dropped from the Roll.

			Elected.
G. A. Hiller,	Cincinnati,	Ohio,	1864
Chas. Kampfmüller,	Cincinnati,	Ohio,	1864
W. H. Klayer,	Cincinnati,	Ohio,	1864
M. M. De Levis,	Chicago,	Illinois,	1859
Geo. Merrell,	Cincinnati,	Ohio,	1864
Geo. Thurber,	New York,	New York,	1859
Corydon E. Tyler,	New York,	New York,	1859

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